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The Bureau

U. S. DEPARTMENT OF LABOR
BUREAU OF LABOR STATISTICS
ROYAL MEEKER, Commissioner

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WOMEN IN INDUSTRY SERIES: No. 5

SUMMARY OF THE REPORT ON CONDITION OF WOMAN AND CHILD WAGE EARNERS IN THE UNITED STATES

DECEMBER, 1915

WASHINGTON
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BULLETIN OF THE
U. S. BUREAU OF LABOR STATISTICS.

WHOLE NO. 175. WASHINGTON. DECEMBER, 1915.

SUMMARY OF THE REPORT ON CONDITION OF WOMAN AND CHILD WAGE EARNERS IN THE UNITED STATES.

INTRODUCTION.

PURPOSE AND SCOPE OF THE REPORT.

The investigation of the condition of woman and child wage earners in the United States, the results of which are summarized in this bulletin, was undertaken late in 1907 in compliance with an act of Congress approved January 29, 1907, which provided "That the Secretary of Commerce and Labor be, and he is hereby, authorized and directed to investigate and report on the industrial, social, moral, educational, and physical condition of woman and child workers in the United States wherever employed, with special reference to their age, hours of labor, term of employment, health, illiteracy, sanitary and other conditions surrounding their occupation, and the means employed for the protection of their health, persons, and morals."

The investigation, begun in 1907, was continued through 1908 and for several months of 1909. For the most part, however, the report relates to conditions as they were found in 1908. Inquiry was confined almost wholly to States east of the Mississippi, owing partly to limitations of time and money, and partly to the fact that the investigation dealt with industrial and social problems, which have had a longer development in the East than in the West.

The full report as published is in 19 volumes. While each volume relates to a distinct subject and is complete in itself, the subjects of the report considered as a whole fall into several groups. The first four volumes deal with four important industries—cotton, glass, men's ready-made garments, and silk—considering them especially as employers of women and children. With these may well be grouped three other volumes—women in stores and factories, women in the metal trades, and women and children in miscellaneous factory industries. Two deal with particular child-labor problems: The reasons why children leave school to go to work, and the connection between the employment of children and juvenile delin-

quency. Three are historical, giving the history of child-labor legislation, the history of women in industry, and the history of trade-unionism among women. Four deal with questions of health: The effect of laundry work upon women, a study of infant mortality in Fall River, a study of the causes of death among cotton-mill operatives, and a study of hookworm disease, especially as found in southern cotton-mill communities. Three others—a study of family budgets of cotton-mill workers, a discussion of the connection between occupation and criminality of women, and a study of the enforcement of labor laws and laws concerning factory inspection in the States visited—complete the list.[1]

The first volume of the report was transmitted to Congress June 14, 1910, and nine other volumes followed during the year 1910. Of the other volumes, four were transmitted in 1911, four in 1912, and one early in 1913.

As no special appropriation was made for the printing of these volumes, the number printed and distributed has been limited to the number, approximately 1,500, regularly printed for the use of Members of Congress and for those libraries which as Government depositaries regularly receive all Government publications, and to 1,000 copies of each volume for distribution directly by the Bureau of Labor Statistics. Since the issue of these volumes requests for copies have been numerous and constant, but because of the cost of reprinting the volumes an edition adequate to meet demands has been impossible in the absence of a special appropriation for that purpose. This summary has, therefore, been prepared for the purpose of presenting briefly the more important results of the investigation within limits which will permit printing in sufficient quantity to supply reasonable demands upon the Bureau.

[1] A full list of the volumes of this report is as follows:
Vol. I. Cotton Textile Industry. pp. 1044.
Vol. II. Men's Ready-Made Clothing. pp. 878.
Vol. III. Glass Industry. pp. 970.
Vol. IV. Silk Industry. pp. 592.
Vol. V. Wage-Earning Women in Stores and Factories. pp. 384.
Vol. VI. The Beginnings of Child-Labor Legislation in Certain States; a Comparative Study. pp. 225.
Vol. VII. Conditions Under Which Children Leave School to Go to Work. pp. 309.
Vol. VIII. Juvenile Delinquency and Its Relation to Employment. pp. 177.
Vol. IX. History of Women in Industry in the United States. pp. 277.
Vol. X. History of Women in Trade-Unions. pp. 236.
Vol. XI. Employment of Women in Metal Trades. pp. 107.
Vol. XII. Employment of Women in Laundries. pp. 121.
Vol. XIII. Infant Mortality and its Relation to the Employment of Mothers. pp. 174.
Vol. XIV. Causes of Death Among Woman and Child Cotton-Mill Operatives. pp. 430.
Vol. XV. Relation Between Occupation and Criminality of Women. pp. 119.
Vol. XVI. Family Budgets of Typical Cotton-Mill Workers. pp. 255.
Vol. XVII. Hookworm Disease Among Cotton-Mill Operatives. pp. 45.
Vol. XVIII. Employment of Women and Children in Selected Industries. pp. 531.
Vol. XIX. Labor Laws and Factory Conditions. pp. 1125.

The present bulletin gives summaries of the 19 volumes of the report in order. No complete summarization of these summaries has been attempted, but some of the more significant points have been indicated, which appear not in any one volume but from a study of the report as a whole.

PROPORTION OF WOMEN AND CHILDREN IN THE INDUSTRIES.

The total number of employees in the establishments included in the investigation, or the total number of female employees (in one study where only female employees were included), with the per cent of boys and girls under 16 years of age and of women 16 years of age and over, are shown in the following table. Over 335,000 persons were employed in the establishments covered, and of this number over 167,000 were females.

PER CENT OF WOMAN AND CHILD WORKERS IN THE ESTABLISHMENTS INCLUDED IN THE INVESTIGATION, BY INDUSTRIES.

Industry.	Total employees in establishments covered.	Per cent of total employees.		
		Women 16 years and over.	Girls under 16 years.	Boys under 16 years.
Cotton textiles (Vol. I):				
New England group [1]	23,080	42.3	2.7	2.5
Southern group [1]	42,205	27.0	9.5	10.5
Men's ready-made clothing (Vol. II) [2]	23,662	49.6	2.9	.7
The glass industry (Vol. III) [3]	54,964	7.4	1.0	0.3
The silk industry (Vol. IV) [4]	21,946	54.9	8.3	2.7
Retail stores (Vol. V):				
Pay-roll data [5]	[6] 35,772			
Personal data [7]	[6] 1,698		2.9	
Factories, etc. (Vol. V): Personal data [8]	[6] 4,573		4.4	
Miscellaneous factory industries (Vol. XVIII) [9]	112,222	40.8	5.0	2.1

[1] Vol. I, p. 16.
[2] Vol. II, p. 23.
[3] Vol. III, p. 13.
[4] Vol. IV, p. 14.
[5] Vol. V, p. 41.
[6] Female employees only; total number of employees in the establishments not reported.
[7] Vol. V, p. 23.
[8] Vol. V, pp. 23, 46.
[9] Vol. XVIII, p. 17; for percentages for the separate industries included in Volume XVIII, see Chapter XVIII of this bulletin.

AGE OF WOMEN AT WORK.

In all the industries where the employment of women was studied one fact of striking importance was the youthfulness of the women and girls found at work. The age grouping is not identical in the various reports, due to defects in the original data, but for those reports in which the age data are on a comparable basis the age distribution of the female employees was as follows:

NUMBER OF FAMILIES WITH MOTHERS LIVING WITH FAMILY, AND NUMBER AND PER CENT OF SUCH FAMILIES WITH MOTHERS GAINFULLY EMPLOYED, BY INDUSTRIES.

Industry.	Families having mothers living with family.		
	Total.	Number in which mother was gainfully employed.	Per cent in which mother was gainfully employed.
Cotton:			
New England group	794	163	20.5
Southern group	1,518	252	16.6
Men's ready-made clothing	2,204	948	43.0
Glass	2,087	291	13.9
Silk	1,837	263	14.3

In the clothing industry a special effort was made to secure for study the families of home finishers, and as the home finishers are usually married women, the results given above can not be taken as representing the situation in the garment-making industry generally. In the other industries, however, the names of woman and child workers were taken from the pay roll without selection of any kind, so that there is no reason to doubt the typical character of the results secured. They show nothing inconsistent with the results of the study of employees already referred to. When all the female employees of the separate industries were considered it was found that about one-eighth were married, the proportion running up in single industries to two-fifths or over. When a number of families, selected on the basis of having at least one woman or child employed in a given industry, were studied, it was found that from something over one-eighth to one-fifth of the mothers were industrially employed. The two studies point to the same conclusion—that the married woman is by no means an exceptional figure in the industrial world.

FAMILIES HAVING DAUGHTERS AT WORK.

Another point of interest brought out in these family studies is the attitude of families toward the industrial employment of their womankind. In general, the mothers were not working for wages unless their earnings were needed for the actual subsistence of the family, but the daughters were apt to be at work even though the family were in more prosperous circumstances. The following figures show the extent to which the daughters of 16 years and over were employed.

PER CENT OF FAMILIES HAVING DAUGHTERS 16 YEARS OF AGE AND OVER IN WHICH SUCH DAUGHTERS WERE AT WORK AND PER CENT OF TOTAL DAUGHTERS 16 YEARS OF AGE AND OVER AT WORK, BY INDUSTRIES.

Industry.	Families having daughters 16 years of age and over.		Daughters 16 years of age and over.	
	Total number.	Per cent in which such daughters were at work.	Total number.	Per cent at work.
Cotton:				
New England group	613	98.2	1,080	95.3
Southern group	938	94.5	1,415	93.9
Men's ready-made clothing	1,392	97.1	2,186	93.9
Glass	1,129	82.3	1,583	80.2
Silk	1,111	93.4	1,681	88.8

Even these figures do not show the extent to which the women of this group were really working, since they show only those who worked during the year preceding the investigation, a year of business depression and slack employment in many industries. Most of those who do not appear in this table as being at work had been industrially employed in previous years and expected to be so employed again as soon as work could be obtained.

The industrial employment of daughters in this age group is almost universal. It does not seem to be a racial matter. The proportion of families having their daughters at work is larger among the cotton workers of the South, who were of pure American stock, than among the silk workers of New Jersey and Pennsylvania, who were predominantly of foreign birth or descent, and the proportion of their daughters at work is exactly the same as among the garment workers, who were practically all foreigners. It seems certain that they are at work either because of economic necessity or because the standards of their class demand wage earning from daughters as completely as from sons, or, which is probably the real situation, from both reasons combined.

CONTRIBUTIONS TO FAMILY INCOME OF DAUGHTERS AT WORK.

The economic reason, however, certainly counts for much. The following table shows the importance of the contributions of these daughters to the family income as compared with those from other wage-earning members.

PER CENT OF FAMILY INCOME CONTRIBUTED BY EACH CLASS OF WORKERS, BY INDUSTRIES.[1]

Class of workers.	Per cent of family income contributed by each class of workers in—				
	Cotton industry.		Ready-made clothing industry.	Glass industry.	Silk industry.
	New England group.	Southern group.			
Fathers	37.7	34.0	48.4	56.0	50.5
Mothers	32.4	27.9	26.8	25.1	33.0
Male children 16 years of age and over	31.1	27.3	36.5	37.8	37.0
Female children 16 years of age and over	42.6	35.2	39.7	26.7	35.1
Children 14 and 15 years of age	18.7	22.9	14.2	18.9	16.6
Children 12 and 13 years of age	14.3	17.6	10.0	15.7	13.3
Children under 12 years of age	[2]3.6	13.5			

[1] These per cents apply only to the incomes of families having wage earners of the specified class.
[2] Based on incomes of two families, each having one child under 12 at work.

Since the contributions made by the daughters range from one-fourth to two-fifths of the total family incomes and since few workingmen's families are sufficiently prosperous to lose such a fraction of their income without feeling it severely, it seems fairly evident that these young women are not forcing themselves into the industrial world through mere restlessness or distaste for home duties.

GIRLS GIVING ALL THEIR EARNINGS TO FAMILY.

Another fact tending to show that economic necessity is the cause for the presence of these girls and young women in the industrial world is the extent to which their earnings are looked upon as family property. Two of the reports show how many of the single women at work turned all of their earnings into the family fund. Among the clothing workers the number and proportion of females 16 years of age and over who contributed all their earnings to the family fund were, for the different cities studied, as follows:

NUMBER AND PER CENT OF FEMALE WORKERS 16 YEARS OF AGE AND OVER IN THE MEN'S READY-MADE CLOTHING INDUSTRY WHO CONTRIBUTED ALL THEIR EARNINGS TO THE FAMILY FUND, BY CITIES.

City.	Number.	Per cent.
Chicago	526	90.1
Rochester	98	68.5
New York	506	92.3
Philadelphia	257	92.8
Baltimore	295	79.7
Total	1,742	87.7

Of 1,214 women employed in retail stores and living at home, 68.5 per cent turned in all their earnings to the family, 26.9 per cent turned in part, and 4.5 per cent kept all for their own use. Of

8,370 female workers employed in factories and living at home, 77.2 per cent gave in all their earnings, 21.5 per cent gave part, and 1.4 per cent kept all for themselves.

PERCENTAGE OF EARNINGS CONTRIBUTED TO FAMILY.

In the family studies made in connection with the four large industries, information was secured as to the average proportion of their earnings turned into the family fund by children 16 years of age and over, whether male or female. The earnings of the female workers and proportions contributed were as follows:

NUMBER OF FAMILIES WITH FEMALE CHILDREN 16 YEARS OF AGE AND OVER AT WORK, AVERAGE EARNINGS OF SUCH CHILDREN, AND PER CENT OF THEIR EARNINGS CONTRIBUTED TO FAMILY, BY INDUSTRIES.

Industry.	Number of families.	Earnings of female children 16 years of age and over.	
		Average.	Per cent contributed to family.
Cotton:			
New England group	602	$321	96.6
Southern group	[illegible]	237	89.0
Men's ready-made clothing	1,352	263	93.2
Glass	929	294	86.4
Silk	1,048	273	94.0

It is evident that the amounts these workers retain for their own individual use are too small to account for their going to work. In the main their earnings go into the family fund, from which they are fed and clothed, but no part of which is looked upon as peculiarly theirs.

LOW EARNINGS OF WOMAN WAGE EARNERS.

One of the most significant facts brought out by the investigation in practically all industries was the large proportion of woman wage earners who were paid very low wages—wages in many cases inadequate to supply a reasonable standard of living for women dependent upon their own earnings for support.

In the group of women employed in the four great industries, cotton, men's ready-made clothing, glass, and silk, from two-fifths to two-thirds of those 16 years of age and over earned less than $6 in a representative week. The exact percentages of women 16 years of age and over whose earnings fell below $6 and $8 were found to be as follows:

PER CENT OF WOMEN 16 YEARS OF AGE AND OVER EARNING UNDER $6 AND UNDER $8 IN A REPRESENTATIVE WEEK.

Industry.	Total number.	Per cent earning—	
		Under $6.	Under $8.
Cotton:			
New England	13,744	38.0	67.4
Southern	12,654	68.0	92.5
Men's ready-made clothing	10,149	49.0	73.1
Glass	2,774	64.0	91.2
Silk	8,596	45.4	71.1

In a group of 1,655 women reporting earnings in department and other retail stores in seven of the principal cities, the average weekly earnings of 30.8 per cent were found to be under $6, and of 66.2 per cent under $8. A study of the pay rolls of department and other retail stores in New York, Chicago, and Philadelphia, including nearly 36,000 female employees, showed that the weekly rates of pay of 26.4 per cent fell below $6, and of 57.5 per cent below $8. In a group of 4,160 women employed in mills and factories in seven of the principal cities the average weekly earnings of 40.1 per cent fell below $6, and of 74.3 per cent below $8.[1]

In another section of the investigation, where the earnings of over 38,000 women 18 years of age and over in 23 industries were secured, the story of low wages which the pay-roll figures tell is equally striking. The per cent of women earning under $6 and under $8 in a representative week in each of these 23 industries is shown in the following table:

PER CENT OF WOMEN 18 YEARS OF AGE AND OVER EARNING UNDER $6 AND UNDER $8 IN A REPRESENTATIVE WEEK, BY INDUSTRIES.[2]

Industry.	Number.	Per cent earning—	
		Under $6.	Under $8.
Canning and preserving, fruits and vegetables	449	59.2	93.5
Canning and preserving, oysters	155	99.4	100.0
Cans and boxes, tin	225	50.2	79.5
Cigar boxes	335	61.8	84.5
Cigarettes	1,071	33.1	75.4
Cigars	5,994	39.3	71.3
Clocks and watches	696	33.5	72.3
Confectionery	1,918	55.6	81.3
Core making	307	22.1	61.9
Corsets	2,789	29.7	58.9
Crackers and biscuits	1,273	54.0	82.0
Hardware, etc	893	57.9	88.2
Hosiery and knit goods	7,251	31.7	64.0
Jewelry	129	31.8	67.4
Needles and pins	427	27.2	61.6
Nuts, bolts, and screws	433	61.7	92.1
Paper boxes	2,213	40.1	74.5
Pottery	503	45.5	65.8
Rubber and elastic goods	233	28.8	56.7
Shirts, overalls, etc	2,371	55.5	89.9
Stamped and enameled ware	992	45.0	72.7
Tobacco and snuff	3,670	55.6	79.7
Woolen and worsted goods	3,915	29.7	68.9
Total	38,182	41.1	72.7

[1] Vol. V, Wage-Earning Women in Stores and Factories, pp. 41, 45, and 46.
[2] Vol. XVIII, Employment of Women and Children in Selected Industries, p. 23.

CAUSES OF DIFFERENCES IN EARNINGS OF MEN AND WOMEN.

The detailed studies of different occupations throw some light on the relation between the earnings of male and female workers in the same industries. In practically every industry studied the men's wages ranged higher than the women's, and the proportion earning fair or good wages was much larger among the men than among the women. To a very large degree this was due to a difference in the work done by men and women; to a less degree it seemed due to a difference in strength, swiftness, or skill when they were doing the same work; and in a very few instances, so few as to be negligible, it seemed due to no cause but that the women were willing to do the work for less and therefore were employed.

The first cause, a difference in the kind of work done, was especially noticeable in the group of miscellaneous factory industries studied. In industry after industry a clear-cut division of work between the sexes was found. Ordinarily the occupations involving skill, training, and responsibility were in the hands of the men, while the work of the women was apt to be at best only semiskilled and in many cases was purely mechanical. Under these circumstances the difference in earnings of the sexes was very marked. Thus of 31,288 male workers 18 years of age and over engaged in these industries, well over one-half (56.5 per cent) earned $10 or more a week, while of the 38,182 female workers in the same age group employed in these industries, only one-tenth (10.5 per cent) earned as much or more than $10. Two-fifths of the women (41.1 per cent), as against 9.5 per cent of the men, earned under $6 a week.

Even when men and women were nominally engaged in the same occupation there was frequently a difference in the kind and quality of work undertaken by them. Thus in gilding pottery, the simplest form, lining, is done almost wholly by women, while the more difficult form, filling in designs, is done by both sexes.

But there is no competition between them, as the men do the artistic work which requires long preliminary training, while the women do those parts which may be learned in a few months. The men receive higher wages and are said to be displacing the women, partly because they do better work and partly because they can move their ware about without assistance.[1]

When men and women were engaged in exactly the same work under the same circumstances it was apt to be at piece rates. Under these circumstances the difference in earnings was usually less and sometimes was in favor of the female workers. Thus in the New

[1] Vol. XVIII, Employment of Women and Children in Selected Industries, p. 268.

HOURLY EARNINGS OF FEMALE WEAVERS IN COTTON MILLS IN MASSACHUSETTS, AND NORTH CAROLINA, BY AGE.

Age.	Massachusetts.		North Carolina.	
	Number.	Hourly earnings.	Number.	Hourly earnings.
12 years	.....	.....	3	$0.066
13 years	.....	.....	15	.065
14 years	15	$0.100	27	.075
15 years	30	.140	44	.079
16 years	37	.131	48	.085
17 years	65	.129	44	.089
18 years	115	.129	77	.094
19 years	127	.140	51	.105
20 years	145	.135	49	.101
21 years	194	.138	48	.110
22 years	182	.148	50	.111
23 years	114	.153	29	.108
24 years	100	.153	30	.113
25 to 29 years	367	.166	111	.113
30 to 34 years	235	.160	59	.119
35 to 39 years	240	.172	26	.106
40 to 44 years	207	.166	19	.117
45 to 49 years	123	.163	11	.107
50 to 54 years	64	.162	1	.185
55 to 59 years	28	.152	1	.094
60 to 64 years	8	.159	1	.128
65 years and over	5	.095	.....	.....
Others, reported as 16 years and over	10	.149	1	.082
Others, reported as 21 years and over	292	.131	15	.121
Total	2,703	.151	760	.103

The earnings of these skilled workers range higher than those of the general mass of cotton workers, but their course is almost identical, except that among the weavers the preliminary maximum is reached at 19. The real maximum is found at exactly the same age as among the general workers—at from 35 to 39 years in Massachusetts and at from 30 to 34 years in North Carolina. This difference is interesting because of its agreement with the results obtained in another part of the investigation of the four special industries. A number of family studies were made in connection with each, and in the course of these the age and yearly earnings of the single women 16 years of age and over found at work were ascertained. They were as follows:

AGE AND EARNINGS OF FEMALE WORKERS, AGED 16 OR OVER, IN FOUR SPECIFIED INDUSTRIES.

Age.	Cotton mills, Northern.		Cotton mills, Southern.		Men's ready-made garments.		Glassworkers.		New Jersey silk workers.		Pennsylvania silk workers.	
	Number.	Average earnings during year.	Number.	Average earnings during year.	Number.	Average earnings during year.	Number.	Average earnings during year.	Number.	Average earnings during year.	Number.	Average earnings during year.
16 years	164	$272	298	$227	405	$207	283	$163	105	$257	192	$166
17 years	151	302	217	231	338	238	233	182	101	280	142	188
18 years	158	304	212	234	289	273	197	214	85	335	102	187
19 years	116	350	140	248	230	287	106	206	77	320	55	201
20 years	98	321	98	246	183	281	106	232	67	356	47	215
21 years	64	347	82	243	136	310	75	219	45	391	38	238
22 years	58	354	56	244	119	310	56	214	44	409	29	276
23 years	36	345	32	260	64	313	45	244	42	404	27	255
24 years	38	369	43	243	43	274	36	246	35	443	11	249
25 to 29 years	73	374	68	248	112	309	52	292	95	419	29	302
30 years or over	61	340	42	265	68	313	43	263	84	418	14	322

Average yearly earnings are less satisfactory than hourly or weekly earnings, since they are less apt to be learned accurately. In this case, however, the numbers involved are large and the similarity of the results seems to indicate that the figures are reliable. In one group, it will be noticed, the preliminary maximum is reached at 18, in three at 19, in one at 20, and in one at 22. On the whole, the age of the temporary maximum of earning power among these workers corresponds more nearly to that among the weavers than among the whole mass of female workers in the different industries. Considering the three sets of figures, it appears that a girl going into industry earns more with each successive year up to somewhere about 20, the exact point varying from 18 to 22 or over, but in a considerable proportion of cases falling at 19 years.

In this connection it is of interest to notice that the British trade boards, appointed to fix minimum rates of wages in certain industries, have rather generally fixed upon 18 as the earliest age at which a female worker may become entitled to the full minimum wage. Under that age she is looked upon as a learner, for whom rates of wages are carefully adjusted according to a scale of increase which will bring her up to the minimum established for adult workers not earlier than 18. The care with which rates of wages for learners at various ages have been worked out is shown by the following table, giving the minimum rates per week for girls employed in the men's garment-making industry:

MINIMUM RATES OF WAGES PER WEEK FOR FEMALE LEARNERS IN THE MEN'S READY-MADE TAILORING TRADE, AS FIXED UNDER THE BRITISH TRADE BOARDS ACT.

	Wages (per week) of learners commencing at—			
	14 and under 15 years of age.	15 and under 16 years of age.	16 and under 21 years of age.	21 years of age and over.
	s. d.	s. d.	s. d.	
During first six months of employment.	3 0 ($0 73)	3 8 ($0 99)	5 2 ($1 26)	First 3 months, 6s. 6d. ($1 64).
During second six months of employment.	4 6 (1 10)	5 2 (1 26)	6 9 (1 64)	Next 3 months, 8s. 6d.
During third six months of employment.	6 0 (1 46)	7 3 (1 76)	9 5 (2 29)	The next 6 months, 10s. 11d.
During fourth six months of employment.	7 3 (1 76)	8 10 (2 15)	12 6 (3 04)	For the 6 months, 12s. 6d. ($3 04).
During fifth six months of employment.	8 4 (2 03)	10 11 (2 60)	.....	
During sixth six months of employment.	9 5 (2 29)	12 6 (3 04)	.....	
During seventh six months of employment.	11 5 (2 78)			
During eighth six months of employment.	12 6 (3 04)			

This table shows a more rapid rate of increase than appears in the three tables just given, which may be accounted for by the much lower wages at which the English earnings begin. The point of

special interest is that the rates are adjusted with the evident purpose of enabling the learner to claim the full minimum by the time she is between 18 and 19 years old, an age not far from that at which the American worker reaches her first or temporary maximum of earning capacity.

ACCIDENTS TO WOMEN.

The reports on health and safety bring out several points not usually recognized. They show that in the metal-working trades, where accidents are common, a woman's peril comes first from her lack of familiarity with machinery and second from the automatism which is invariably and inevitably established by a worker who is attendant upon a machine, and that so-called carelessness is often the line of conduct best adapted to secure safety. They establish conclusively the fact that the death rate is much higher among women working in cotton mills than among women not so employed, and that female operatives are especially susceptible to tuberculosis. Most unexpectedly they show that it is impossible to connect any considerable part of the high infantile mortality rate of Fall River with the employment of married women in the mills, but that the ignorance of the mothers as to the proper care and feeding of their babies is the leading cause to which the numerous deaths of children under one year of age must be attributed, and that all other causes are subsidiary to this.[1]

SUBSTITUTION OF WOMEN FOR MEN IN INDUSTRY.

The investigation as a whole brings out several general facts about women in industry. It shows that for over half a century a process of substitution has been going on by which men have been gradually taking the leading part in industries formerly carried on chiefly in the home and considered distinctively feminine, such as spinning and weaving and garment making and knitting. As the women have been more or less dispossessed in their specialties they have either gone into work formerly considered men's, such as the printing trade, or entered newly established industries which had not been definitely taken over by either sex. In both cases they are usually found doing the least skilled and poorest paid work.

The individual woman entered the industrial world under the pressure of necessity. The employer invited their entrance en masse because they were cheap, and above all because they were docile and easily managed.[2] They were cheap and easily managed partly

[1] See pp. 357–359.

[2] Instances were found of employers who declared that they would rather have women, although men could do the work better, because the women were unorganized and therefore more readily controlled.

because they were in the main young, partly because they were unorganized, and partly because, as they expected to stay in the industrial world only a short time, they considered it better to accept conditions as they found them than to fight for improvements.

To a considerable extent this is still the situation, but there are indications that it is changing. As already mentioned, there are a considerable number of older women in the industrial field, and the married woman is becoming a more and more common figure. Also the idea of organization seems to be increasing among women and the woman's trade-union movement, which seemed to reach its lowest ebb in 1907–8, was already reviving before these reports appeared. Most important, perhaps, of all, their early experiences with trade-unionism have convinced women that the hopeful line of activity for them is the effort to secure protective laws with careful provision for their enforcement, and this effort they are pushing vigorously.

EMPLOYMENT OF CHILDREN.

The family studies already mentioned brought out also some facts as to the employment of children. In every State visited the employment of children of 14 and 15 was legal and customary. The extent to which in the families studied children of these ages were at work is shown by the following figures:

PER CENT OF FAMILIES HAVING CHILDREN 14 AND 15 YEARS OF AGE IN WHICH SUCH CHILDREN WERE AT WORK, AND PER CENT OF TOTAL CHILDREN 14 AND 15 YEARS OF AGE AT WORK, BY INDUSTRIES.

Industry.	Families having children 14 and 15 years of age.		Children 14 and 15 years of age.	
	Total number.	Per cent in which such children were at work.	Total number.	Per cent at work.
Cotton:				
New England group	539	87.2	624	83.8
Southern group	600	96.9	1,072	96.2
Men's ready-made clothing	865	75.0	1,218	71.8
Glass	1,681	92.9	1,994	89.5
Silk	1,258	91.7	1,437	89.6

Since these families were selected on the basis of having at least one woman or child gainfully employed, it is possible that they do not represent conditions among wage earners generally, but they do unquestionably show that there are large numbers of wage earners among whom it is a matter of course that children should go to work as soon as the law permits and an opportunity is found. The contrast between the southern group of cotton workers and those in the other industries studied is marked. No other group shows either as large a proportion of families putting their children in this age group

to work or as large a proportion of the children at work. The contrast between the northern and southern cotton workers in this respect suggests that the laws restricting child labor in the North or the public sentiment back of those laws have had some effect in keeping children from being put to work, even when they have reached the legal age. The extent to which the children are at work does not seem to be wholly a matter of economic necessity, for the garment-making families, who had the lowest average incomes of any group studied, showed also the smallest proportion of children at work. And it is to be hoped that it is not a matter of race, since the southern cotton workers were of pure American stock, while the other groups were very largely foreign.

INCOME FROM CHILDREN AT WORK.

The proportion of the family income in each group contributed by the children of 14 and 15 was as follows:

	Per cent.
Cotton:	
New England group	18.7
Southern group	22.9
Men's ready-made clothing	14.2
Glass	18.9
Silk	16.6

CHILDREN UNDER 14 AT WORK.

The employment of children under 14 presents a very different question, since in most of the Northern States it was illegal, while in the Southern States it was permitted. Hence the figures concerning it do not show the attitude of the northern families themselves, as in the case of children of 14 and 15. The following figures show the extent to which children under 14 were at work in the families studied:

PER CENT OF FAMILIES HAVING CHILDREN UNDER 14 YEARS OF AGE IN WHICH SUCH CHILDREN WERE AT WORK AND PER CENT OF TOTAL CHILDREN UNDER 14 YEARS OF AGE AT WORK, BY INDUSTRIES.

Industry.	Families having children under 14 years of age.		Children under 14 years of age.	
	Total number.	Per cent in which such children were at work.	Total number.	Per cent at work.
Cotton:				
New England group	(1)	.....	1,748	2.9
Southern group	(2)	.....	4,145	34.5
Men's ready-made clothing	1,544	3.6	3,939	1.5
Glass	1,646	10.9	4,768	4.1
Silk	1,459	35.1	4,470	11.7

[1] In the New England group 360 families had children 12 and 13 years of age, and in 46 of these families (12.8 per cent) such children were at work; 518 families had children under 12, and in 2 of these (0.4 per cent) such children were at work.

[2] In the southern group 932 families had children 12 and 13 years of age, and in 865 (92.8) of these one or more such children were at work; 1,161 families had children under 12, and in 399 (34.4 per cent) of these one or more such children were at work.

The southern group of cotton workers and the silk workers are the only groups in which children under 14 were employed to any great extent. Among the cotton workers a considerable proportion of such children were illegally employed; among the silk workers, practically all.

ANNUAL EARNINGS.

The importance to the family of the earnings of children under 14 is shown by the following figures:

NUMBER OF CHILDREN UNDER 14 YEARS OF AGE AT WORK, THEIR AVERAGE ANNUAL EARNINGS, AND PER CENT SUCH EARNINGS ARE OF NET FAMILY INCOME, BY INDUSTRIES.

Industry.	Number of children under 14 years of age at work.	Annual earnings of children under 14 years of age at work.	
		Average.	Per cent of net family income.[1]
Cotton:			
New England group	50	(2)	(2)
Southern group	1,428	(2)	(2)
Men's ready-made clothing	58	$78	10 0
Glass	197	119	15 7
Silk	416	112	13.3

[1] Based on incomes of families in which children under 14 were at work.

[2] In the study of the cotton industry the children under 14 were divided into two groups, those 12 and 13 years old and those under 12. Those 12 and 13 years old in New England numbered 48 and earned an average of $153 per annum, or 14 3 per cent of the net family income; in the South this group numbered 96 and earned an average of $163 per annum, or 17 6 per cent of the net family income. Those under 12 in New England numbered 2, earning an average of $ 2 per annum, or 3 6 per cent of net family income; in the South this group numbered 476, earning an average of $114 per annum, or 15.5 per cent of net family income.

The children's earnings, it will be noted, form from one-tenth to something under one-sixth of the family income. Yet in themselves the earnings are small, and their importance is due more to the low average incomes of the families than to the real value of the children's earnings. The low average, however, includes some comfortably high incomes, and in a number of cases it was apparent that the work of the children was not due to absolute necessity.

NEED OF CHILDREN'S EARNINGS.

Two studies were undertaken to see to what extent the employment of children was due to the pressure of actual want. In connection with the study of the glass industry, 864 families having children under 16 at work were given special and detailed study to ascertain whether the earnings of the children were really necessary to save the family from economic distress; and in the study of why children leave school to go to work, based on 620 children, this question was gone into with great care. In the first case it was concluded that

of the 864 families there were 314, or 36.3 per cent, in which the earnings of the children were necessary to avoid absolute distress and in which there was neither any convertible capital which might have been used in lieu of the children's earnings, nor any adults idle from choice whose wages, if they had been at work, would have obviated the necessity for the work of the children. Of the 620 children considered in the other study, 186, or 30 per cent, were at work owing to pressing necessity which could not be met by any other resources the families possesssed. In both of these studies children were found at work whose wages were necessary to enable the family to keep up a desired standard of living, to pay for the home, to educate other children, or to accomplish some other purpose the family had at heart, but these have not been counted as cases of necessity.

REASONS WHY CHILDREN ARE AT WORK.

The conclusion seems to be that numbers of children are at work whose families would not really suffer hardship if the employment of the children were forbidden, and another considerable number whose families could very well afford to spare their earnings. The question naturally arises why children of the latter group are at work. To a considerable extent it seems due to indifference or active hostility to the schools on the part of both parents and children. This is referred to in several of the reports.

There was developed, especially in Pennsylvania, New Jersey, and West Virginia, a deep-seated distrust of the efficiency of schooling as a help to win in the battle of life if one was to be a worker at the trades or at common labor. There was, moreover, especially in the States named, almost a settled conviction that the efficiency of schools and school models and ideals and its methods of attaining them were alike inadequate to the needs of real life and that the boy would learn more of real use to him in the factory than in the schools.[1]

The parents in the cotton-mill town or village of the South may be grouped in two classes: (1) Those who do all they can to have their children get all the school training available in the town or village and (2) those who are indifferent or hostile to the schools. The latter outnumber the former. In the former group are many parents who do wonders upon their slender incomes to educate their children. In the latter group are many who would not see to it that their children attended school regularly even if strict labor laws excluded the children from the mill. Poverty and the generally low earning capacity of the mill people, who get lower wages than the people in almost any other great industry, are among the prime causes of the indifference and hostility of the parents toward the schools.[2]

[1] Vol. III, The Glass Industry, p. 588.
[2] Vol. I, Cotton Textile Industry, p. 581.

In the study of the causes for which children left school special inquiries were made as to the attitude of the children toward the school, which showed that almost one-half (48.9 per cent) of the children studied were not satisfied at school, their attitude ranging from a mere dislike to a positive hatred of everything connected with the schools. "The leading cause of dissatisfaction, taking all places together, seemed a dislike of the general manner of life in school, which was responsible for the dissatisfaction of 19 per cent of the children."[1]

OPPORTUNITIES FOR CHILDREN IN OCCUPATIONS.

The scope of the investigation did not include an inquiry as to how far this attitude of parents and children was justified. Incidentally, however, some information was obtained as to the way in which the work the children took up counted toward a preparation for their future life. In the cotton industry the children who entered it, in the South at least, were very likely to remain in it, but the work at which they were most likely to begin—doffing for boys and ring spinning for girls—did not in itself give them any training for the future. In the garment-making industry there were very few openings for boys. Girls were employed to some extent, but no system of training them existed, and it depended upon the individual girl whether or not she worked up to one of the relatively well-paid occupations. In the glass industry a boy has about one chance in from three to seven of being chosen as an apprentice and thereby gaining an opportunity to acquire a skilled trade. In the silk industry no system of apprenticeship existed and entering a silk mill gave no promise of securing a trade for life. Among the 620 children whose reasons for leaving school and going to work were studied only 43 (6.9 per cent) had secured positions on first beginning work which offered chances to learn a trade, and in many of these cases the opportunity to enter such work had been secured by friends or relatives already in the trade.

There is nothing in any of the cases considered to show that the children with neither friends nor relatives in a trade could not have secured a foothold in it had they tried. But there is much to indicate that unless they had some such connection with a trade or industry its opportunities and advantages were alike apt to remain unknown to them. Nothing served to suggest to a child the desirability of learning a trade or entering on an industry in which he would have a chance of rising, so he took the first thing which came to hand.[2]

[1] Vol. VII, Conditions Under Which Children Leave School to go to Work, p. 111.
[2] Idem, p. 186.

On the whole, it seems a fair inference from these studies that if, as some of the parents believe, the schools do not fit children for real life, the occupations which the children are apt to take up on leaving school are equally defective. They fit the children to earn children's wages for a few years, but give them no training for the day when they find themselves too old for children's work, but unequipped with any trade by which to support themselves through the coming years.

On the whole the picture presented by the various studies of children at work is in itself rather depressing. Numbers are shown going to work as soon as the law permits and not infrequently sooner. Their hours are long, the conditions under which they work frequently undesirable, their occupations have little value as a training for life, their school days are cut short, and their work offers little mental stimulus as a substitute for the schooling they miss.

DECREASE OF PROPORTION OF CHILDREN AT WORK.

But there is another side to the picture. Unquestionably there are many indications that the general attitude toward the employment of children is changing rapidly for the better. Relatively children are less numerous in the great industries now than they were 20 years ago, partly because increasing legal restrictions make them less available as a source of labor supply, and partly, no doubt, because of a growing sentiment against their employment. In one of the four large industries studied—garment making—children are used but little under any circumstances. The cotton and glass industries both showed marked decreases in the proportion children formed of their total employees, while in the glass industry at the time of this investigation it seemed possible that the growing use of machinery might soon do away altogether with the employment of boys under 16.

This does not, of course, mean that the employment of children is not extensive and serious. The different reports show not only that children were found employed in great numbers, but that they were found employed below the legal age, employed at work legally prohibited to children of their years, employed for illegally long hours or at illegal times, employed under evasions of the law or on false certificates of age, and so on through a long category of undesirable conditions. But in spite of all this there is evidence of a diminution in the relative number of children employed and very plain indications that a public sentiment against their exploitation is beginning to make itself felt effectively.

The history of legislation directed against child labor shows an interesting parallel between the growth of public concern over this matter in the North during the middle and later years of the last

century and the similar process now going on in the South. As the industrial development of the North came earlier, the North naturally first perceived the evils of the unrestricted employment of children and tried to apply some check. The arguments heard in the South to-day for and against child labor might be duplicated almost word for word from the legislative records of Massachusetts or New York or almost any one of the great industrial States of the North. But the South, coming into its problem later, is moving more rapidly toward its solution. The two sections are drawing closer in their attitude toward this question, and their combination, which furnishes a national sentiment, renders much easier the local regulation of child labor.

CHAPTER I.—THE COTTON TEXTILE INDUSTRY.

The first volume of the report on Condition of Woman and Child Wage Earners in the United States is based upon an investigation carried on through the fall of 1907 and the spring and early summer of 1908 in four States of New England and in six States of the South, the States chosen being those where most of the cotton mills are located. The mills investigated numbered 198, being 18.3 per cent of the total mills, and employing 25.4 per cent of the total spindles in the States covered. Of the 198 mills, 154 manufactured cloth and the yarn from which cloth is made, 1 manufactured cloth only, and 43 manufactured yarn only. Some were located in cities, some in towns, and some in the country districts. In selecting mills for investigation the aim was to choose in each locality those that would be representative of the industry, including some that showed the best conditions, some that showed the worst, and some in which average conditions prevailed.

The proportion of the industry covered in the States in which the investigation was made is indicated in the following table. The table shows the number of cotton-consuming establishments and the number of their spindles in 1908 in the 10 States in which mills were investigated,[1] together with the number of mills investigated and the number of spindles in such mills. The table also shows the per cent that the mills investigated were of the mills which were reported by the census for the same States and, similarly, the per cent which the spindles of the mills investigated formed of the spindles which were reported by the census.

TOTAL NUMBER OF COTTON MILLS AND OF SPINDLES IN STATES COVERED BY THE INVESTIGATION, AND NUMBER AND PER CENT INVESTIGATED.

State.	Establishments.			Spindles.		
	Reported by census, 1908.	Included in this investigation, 1907–8.	Per cent investigated.	Reported by census, 1908.	Included in this investigation, 1907–8.	Per cent investigated.
Maine	35	7	20.0	978,188	439,200	44.9
New Hampshire	41	7	17.1	1,320,500	181,576	13.9
Massachusetts	203	22	10.8	9,440,380	1,696,612	18.0
Rhode Island	77	10	13.0	2,488,100	644,114	25.7
Virginia	30	4	13.3	285,579	183,740	64.2
North Carolina	293	59	20.1	2,944,404	671,418	22.9
South Carolina	150	36	24.0	3,711,000	1,127,720	30.4
Georgia	154	31	20.1	1,792,780	709,176	39.6
Alabama	71	13	18.3	949,942	309,960	32.6
Mississippi	28	9	32.1	173,216	113,071	65.3
Total	1,082	198	18.3	23,992,113	6,105,707	25.4

[1] Census Bulletin No. 97, pp. 10, 11.

The latest figures available of the total number of employees in the entire industry at the date of the investigation were those of the census of 1905. But as the industry grew rapidly, especially in the South, between 1905 and 1908, these figures are not satisfactory for comparison with the number of employees included in this investigation in 1908. This must be borne in mind when the statement is made that 41,335 employees covered by the investigation in 1908 comprised 32 per cent of the total operatives in the same States in 1905.

In this investigation each establishment reported was personally inspected by agents of the Bureau of Labor. No establishment was reported unless its officers permitted the agent to have full access to all departments of the mill and to examine the pay rolls. The information thus obtained was supplemented by further details gained by personal interviews with both employers and employees.

The following table shows the number, location, and working force of the mills investigated:

NUMBER OF ESTABLISHMENTS INVESTIGATED AND NUMBER AND PER CENT OF EMPLOYEES OF EACH SEX AND EACH AGE GROUP, BY STATES.

State.	Establishments investigated.	Number of employees.					Per cent of total employees.				
		16 years and over.		Under 16 years.		Total.	16 years and over.		Under 16 years.		Total.
		Male.	Female.	Male.	Female.		Male.	Female.	Male.	Female.	
NEW ENGLAND GROUP.											
Maine	7	1,282	1,450	36	33	2,801	45.7	51.7	1.3	1.3	100.0
New Hampshire	4	1,000	1,000	20	20	2,040	49.0	49.0	1.0	1.0	100.0
Massachusetts	28	5,000	5,000	200	200	10,400	48.1	48.1	1.9	1.9	100.0
Rhode Island	10	1,500	1,500	100	100	3,200	46.9	46.9	3.1	3.1	100.0
Total	49	8,782	8,950	356	353	18,441	47.6	48.5	1.9	1.9	100.0
SOUTHERN GROUP.											
Virginia	4	1,000	1,000	50	50	2,100	47.6	47.6	2.4	2.4	100.0
North Carolina	24	5,000	5,000	200	200	10,400	48.1	48.1	1.9	1.9	100.0
South Carolina	8	2,000	2,000	100	100	4,200	47.6	47.6	2.4	2.4	100.0
Georgia	4	1,000	1,000	50	50	2,100	47.6	47.6	2.4	2.4	100.0
Alabama	4	1,000	1,000	50	50	2,100	47.6	47.6	2.4	2.4	100.0
Mississippi	4	1,000	1,000	50	50	2,100	47.6	47.6	2.4	2.4	100.0
Total	48	11,000	11,000	500	500	23,000	47.8	47.8	2.2	2.2	100.0
Grand total	97	19,782	19,950	856	853	41,441	47.7	48.1	2.1	2.1	100.0

LOCALIZATION OF THE INDUSTRY.

The cotton textile industry was selected for this study because it is known as being one of the leading industries in the United States, but as being one of the most important in the world and also employing

It employed, in 1905, nearly 60,000 more women than any other manufacturing industry and more children than any other four industries combined. In 1905 the woman wage earners in the manufacturing industries in the United States numbered 1,065,884. Of these 128,163, or about one-eighth, were engaged in cotton manufacture, including cotton small wares. The children who were wage earners in manufacturing industries in 1905 numbered, according to the census of manufactures for that year, 159,899, of whom 40,428, or more than one-fourth, were employed in the manufacture of cotton.[1]

The industry is strictly localized, being practically confined to New England and the Southern States. In New England the tendency is toward concentration in large mills, while in the South the establishments are apt to be smaller and more scattered. In 1880 New England had 439 mills averaging 19,663 spindles apiece and the South 161 mills averaging 3,366 spindles apiece; by 1905 the number of mills in New England had decreased to 308, but these had an average of 45,166 spindles per mill, while the Southern mills had increased to 550, with an average of 13,652 spindles apiece. In the main the mills in the South are employed on a coarser grade of work than are those of New England, and the proportion of mills doing spinning only is larger in the South than in the North. This has a direct bearing upon the question of child labor, since spinning is one of the occupations in which children can be employed most effectively.

In the development of the cotton industry there has been a gradual displacement of women by men and a gradual decrease in the proportion of children employed. In 1880 males 16 years of age and over formed 34.6 per cent of the total employees in the industry, females 16 years of age and over 49 per cent, and children under 16 formed 16.4 per cent. In 1905 these proportions were respectively 46.9 per cent, 40.2 per cent, and 12.9 per cent.

THE LABOR FORCE.

AGE OF EMPLOYEES, BY SEX.

The table already given shows that the study deals with a total of 81,835 employees, of whom 52.4 per cent were males 16 years of age and over, 33.6 per cent were females 16 years and over, and 14 per cent were children under 16. The following table shows the age distribution of these employees in greater detail.

[1] Vol. I, Cotton Textile Industry, p. 19.

NUMBER AND PER CENT OF COTTON-MILL EMPLOYEES IN SPECIFIED AGE GROUPS, BY SEX. 1907–8.

[Males 16 years of age and over in occupations employing no women and children are not included in this table.]

Age.	New England group.				Southern group.			
	Male.		Female.		Male.		Female.	
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
Under 12 years	14	0.19	2	0.01	560	3.76	389	2.21
12 and 13 years	46	.61	63	.42	1,840	12.36	1,511	8.56
14 and 15 years	761	10.17	825	5.44	2,654	17.82	2,653	15.04
Others, reported as under 16 years					26	.17	32	.18
Total under 16 years	821	10.97	890	5.87	5,080	34.11	4,585	25.99
16 and 17 years	880	11.76	1,708	11.25	1,489	10.00	2,674	15.16
18 to 20 years	1,096	14.64	2,962	19.51	1,745	11.71	3,460	19.61
Total under 21 years	2,797	37.37	5,560	36.63	8,314	55.82	10,719	60.76
21 years and over	4,684	62.58	9,516	62.69	6,313	42.39	6,565	37.21
Others, reported as 16 years and over	4	.05	104	.68	266	1.79	358	2.03
Grand total	7,485	100.00	15,180	100.00	14,893	100.00	17,642	100.00

A striking feature of this table is the marked difference in the age level, especially for female employees, in the two sections. In the South less than two-fifths while in New England well over three-fifths of the female workers were 21 years of age and over. The higher age level in the North is very possibly connected with the finer grade of work done there and the relative rarity of mills which do only spinning, and in which therefore young workers can be more largely employed. In both sections, however, the proportion aged 21 years and over was relatively large as compared with the other industries of which a special study was made. In the silk industry in Pennsylvania the proportion of female workers 21 years of age and over was 25.8 per cent,[1] in the glass industry it was 28.7 per cent,[2] and in the manufacture of men's ready-made clothing it was 47.9 per cent[3] thus exceeding the proportion for cotton workers in the Southern States but not reaching that for cotton workers in the New England States.

The age at which the greatest number of women was employed was in each State as follows: Maine, 20 years; Massachusetts and Rhode Island, 21 years; Virginia, 16 years; and in each of the other States 18 years. In the New England States as a whole the two ages 18 and 21 years had approximately the same number of female employees. In the Southern States as a whole 18 was the predominant age, and if the totals of the two sections are combined the

[1] Vol. IV, The Silk Industry, p. 51.
[2] Vol. III, Glass Industry, p. 641.
[3] Vol. II, Men's Ready-Made Clothing, p. 36.

number of female employees at 18 is much in excess of those at any other age.

The difference in the number and proportion of children under 16 and under 14 in the two sections is very marked. This is discussed in detail in a later section. (See pp. 49 to 60 below.)

OCCUPATIONS, BY SEX AND AGE.

The following table shows the distribution of these workers among some of the leading occupations:

NUMBER AND PER CENT OF EMPLOYEES IN SELECTED OCCUPATIONS IN COTTON MILLS INVESTIGATED, BY AGE AND SEX.

Occupation.	Number of employees.						Per cent of employees in each occupation.					
	16 years and over.		Under 16 years.			Total.	16 years and over.		Under 16 years.			Total.
	Male.	Female.	Male.	Female.	Total.		Male.	Female.	Male	Female.	Total.	
NEW ENGLAND GROUP.												
Doffers	498	275	126	110	236	1,009	2.9	1.9	15.4	12.4	13.8	3.1
Ring spinners	420	2,194	92	307	399	3,013	2.5	15.4	11.2	34.5	23.3	9.1
Scrubbers and sweepers	111	88	74	12	86	285	.6	.6	9.0	1.3	5.0	.9
Spooler tenders	225	1,675	2	14	16	1,916	1.3	11.7	.2	1.6	.9	5.8
Spoolers	3	1,214	.....	114	114	1,331	(1)	8.5	.....	12.8	6.7	4.0
Weavers	4,404	5,318	62	92	154	9,876	25.9	37.2	7.6	10.3	9.0	29.9
Other occupations employing women and children	1,003	3,526	465	241	706	5,235	5.9	24.7	56.6	27.1	41.3	15.8
Occupations employing men only	10,365	.....	.....	.....	.....	10,365	60.9	.....	.....	.....	.....	31.4
Total	17,029	14,290	821	890	1,711	33,030	100.0	100.0	100.0	100.0	100.0	100.0
SOUTHERN GROUP.												
Doffers	820	8	2,995	47	3,042	3,870	3.2	.1	59.0	1.0	31.5	8.0
Ring spinners	108	2,931	359	3,009	3,368	6,407	.7	22.4	7.1	65.6	34.8	13.4
Scrubbers and sweepers	252	130	407	14	421	803	1.0	1.0	8.0	.3	4.4	1.7
Spooler tenders	1,218	608	41	39	80	1,906	4.8	4.6	.8	.9	.8	3.9
Spoolers	10	2,529	10	469	479	3,018	(1)	19.4	.2	10.2	5.0	6.2
Weavers	3,515	3,834	290	337	627	9,976	21.6	29.4	5.7	7.4	6.5	20.7
Other occupations employing women and children	1,830	3,017	978	670	1,648	6,495	7.1	23.1	19.2	14.6	17.0	13.4
Occupations employing men only	15,770	.....	.....	.....	.....	15,770	61.6	.....	.....	.....	.....	32.7
Total	25,583	13,057	5,080	4,585	9,665	48,305	100.0	100.0	100.0	100.0	100.0	100.0

(1) Less than one-tenth of 1 per cent.

Weaving, the most skilled of the occupations listed here, employs a larger proportion of the females 16 years of age and over than any other single occupation, both in the northern and in the southern group, but relatively it is more important in the northern group. In the New England group no other occupation employs half as many women, the next most important, ring spinning, accounting for only 15.4 per cent against the 37.2 per cent engaged in weaving, while in the southern group both ring spinning and spooling

come much nearer to it in importance, the first showing 22.4 per cent and the second 19.4 per cent against the 29.4 per cent employed as weavers.

None of the other occupations shown in this table can be considered skilled. Scrubbing and sweeping, of course, are frankly unskilled; doffing is not much better, and ring spinning, spooling, and speeder tending demand very little skill. Some of those engaged in "Other occupations employing women and children" were skilled workers, but what proportion they formed of the whole can not be stated. It appears, however, that in the northern group 38.1 per cent and in the southern group 47.5 per cent of the female workers 16 years of age and over were known to be in either unskilled occupations or those demanding only a very low degree of skill.

RELATIVE IMPORTANCE OF WOMEN IN DIFFERENT OCCUPATIONS.

The relative importance of women in the different occupations is not the same in the two sections. The following figures show for each group the proportion which women 16 years of age and over form of the total workers in each of the specified occupations:

PER CENT WHICH FEMALES 16 YEARS OF AGE AND OVER FORM OF WORKERS IN SPECIFIED OCCUPATIONS.

Occupation.	New England group.	Southern group.
Doffers	27.2	0.2
Ring spinners	72.8	45.3
Scrubbers and sweepers	30.9	16.2
Speeder tenders	87.4	31.9
Spoolers	91.2	83.8
Weavers	53.9	38.4
Other occupations employing women and children	67.3	46.4
Total occupations employing women and children	63.0	40.1

Several points of interest are brought out by these figures. One is the different custom of the two sections in regard to employing women as doffers, their employment in this capacity being practically unknown in the southern group, while in the New England group they form over a quarter of the doffers. Another is the small part taken by women in such traditionally feminine pursuits as scrubbing and sweeping and their importance in the skilled work of weaving; nearly two-fifths of the whole number of weavers in the South and over half in the New England group were women. The reason usually advanced for the employment of a higher proportion of women both as weavers and as speeder tenders in New England is their adaptability to the finer grade of work done in that section, which demands a nimbleness and dexterity not always found in

men's fingers. In the South a coarser grade of work is done, which requires more manual strength and less dexterity.

Turning to the employment of children under 16, doffing and ring spinning are the two most important occupations, employing 37.1 per cent of all children in the New England mills and 66.3 per cent in the southern mills. In the northern group 23.4 per cent of the doffers and 13.3 per cent of the ring spinners were children under 16, while in the southern group these percentages were, respectively, 78.6 and 52.1.

RACE OF EMPLOYEES.

In the New England States the race was learned of 21,915 employees in occupations in which women and children worked. The number of workers belonging to each of the leading races and the proportion they formed of the total group were as follows:

Race.	Number.	Per cent.	Race.	Number.	Per cent.
American	1,569	7.2	Polish	2,743	12.5
English	2,114	9.6	Portuguese	1,077	4.9
French Canadian	9,152	41.8	Other races	1,903	8.7
Irish	2,735	12.5			
Italian	623	2.8	Total	21,915	100.0

Anyone familiar with New England mills would expect the predominance of French Canadians here shown. More significant is the fact that the Poles, who at the time of this investigation were among the most recent comers in the industry, were already equal in number to the Irish, who had been in the mills for more than half a century.

The distribution, by age and sex, of these leading races was as follows:

NUMBER AND PER CENT OF MALE AND FEMALE EMPLOYEES 16 YEARS OF AGE AND OVER AND OF THOSE UNDER 16 YEARS OF AGE, IN COTTON MILLS IN THE NEW ENGLAND GROUP, BY RACE.

Race.	Employees 16 years and over.				Employees under 16 years.				Total.	
	Males.		Females.		Males.		Females.			
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
American	286	18.2	1,134	72.3	76	4.8	73	4.7	1,569	100.0
English	604	28.6	1,350	63.9	87	4.1	73	3.4	2,114	100.0
French Canadian	2,610	28.5	5,633	61.5	410	4.5	498	5.5	9,152	100.0
Irish	334	12.2	2,298	83.7	50	1.8	63	2.3	2,735	100.0
Italian	243	48.6	249	40.0	26	5.8	35	5.6	623	100.0
Polish	920	33.5	1,749	64.1	26	1.0	38	1.4	2,743	100.0
Portuguese	322	29.9	680	63.1	34	3.2	41	3.8	1,077	100.0
Other races	1,001	52.6	803	42.2	61	3.2	37	2.0	1,902	100.0
Total	6,280	29.1	13,896	63.4	780	3.6	859	3.9	21,915	100.0

The large proportion which women 16 years of age and over form of the Irish workers is noticeable; among the workers under 16, too, the Irish show a greater proportion of female than of male workers. In regard to the racial attitude toward the employment of children, the Italians show the largest proportion of workers under 16 (11.4 per cent), but their numbers are so few and they are found in so few places that it is impossible to say whether this indicates a general tendency or whether it is due to local conditions. The French Canadians[1] come next with 10 per cent under 16, closely followed by the Americans with 9.5 per cent, and the English with 7.5 per cent stand fourth.

The occupational distribution of these different races is shown in the following table:

NUMBER AND PER CENT OF EMPLOYEES IN SPECIFIED OCCUPATIONS IN COTTON MILLS IN THE NEW ENGLAND GROUP, BY RACE.

Number.

Occupation.	American.	English.	French Canadian.	Irish.	Italian.	Polish.	Portuguese.	Other races.	Total.
Doffers	52	50	519	52	38	121	59	115	1,006
Ring spinners	103	73	1,481	165	117	279	347	361	2,926
Scrubbers and sweepers	16	13	84	55	18	39	15	44	284
Speeder tenders	104	265	542	409	42	345	99	93	1,899
Spooler tenders	106	62	702	145	17	103	113	59	1,307
Weavers	487	1,202	4,078	1,209	291	1,499	223	837	9,826
Other occupations	701	449	1,746	700	100	357	221	393	4,667
Total	1,569	2,114	9,152	2,735	623	2,743	1,077	1,902	21,915

Per cent.

Doffers	3.3	2.4	5.7	1.9	6.1	4.4	5.5	6.0	4.6
Ring spinners	6.6	3.5	16.2	6.0	18.8	10.2	32.2	19.0	13.3
Scrubbers and sweepers	1.0	.6	.9	2.0	2.9	1.4	1.4	2.3	1.3
Speeder tenders	6.6	12.5	5.9	15.0	6.7	12.6	9.2	4.9	8.7
Spooler tenders	6.8	2.9	7.7	5.3	2.7	3.8	10.5	3.1	6.0
Weavers	31.0	56.9	44.5	44.2	46.7	54.6	20.7	44.0	44.8
Other occupations	44.7	21.2	19.1	25.6	16.1	13.0	20.5	20.7	21.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Weaving is the most skilled of these occupations, and it is noteworthy that Americans show a smaller proportion in this than is shown by any other race except the Portuguese. The English show the largest proportion of weavers, over half their number being in this occupation, but the Polish workers very nearly equal them in this respect. On the whole the Portuguese show the lowest level of skill among the races here presented.

In the southern mills the question of race scarcely presents itself, the workers being practically without exception native born and of

[1] In this discussion the race is that of the parents. Thus the Americans are children of the native born, the English are children of English parents whether born in England or the United States, and so on.

American descent. Negro labor was scarcely utilized except for the roughest work about the mills.

In some mills Negro men are employed in the picker room, where a large amount of floating lint, dust, and dirt is always found, and where the work is heavier and more disagreeable than in any other department of the mill. In a few mills Negro men are employed for the heaviest work in the card room, which is the next dustiest room in a cotton mill. Negro men are employed as dyehouse hands, as teamsters, as yard hands, as firemen, sometimes as engineers, and sometimes as assistants in machine repair shops connected with cotton mills, but in the manufacturing process Negro men never go beyond the card room, except that occasionally they work in the dyehouse.[1]

Negro women and girls were employed in 18 of the southern mills, but in very small numbers. In a total of 3,760 women and children employed in these 18 mills there were only 166 Negroes.

SOURCE OF LABOR SUPPLY IN THE SOUTH.

Since immigrants and children of immigrants have not been available as a labor supply for the southern mills, they have recruited their working force very largely from the country around. Of 2,122 women and children whose early environment was learned, 75.8 per cent had come from farms, 20.2 per cent from villages, and only 4 per cent from cities.

So much has been said and written concerning the extent to which the mills make use of the mountaineers as a labor supply that the report discusses at some length the degree of truth in these statements, the general conclusion being that the numerical importance of the mountaineers among the cotton-mill workers has been overestimated.

Some of those who reported that their early childhood was spent on a farm came from small farms in the mountains of Virginia, North Carolina, and Tennessee. The exact proportion of those coming from the mountains was not secured and the proportion varies greatly in different sections. Taking the mill population as a whole, for the mills visited during this investigation, the percentage of such operatives was very much smaller than the percentage of those who come from the lowland farms surrounding the cotton-mill villages.

For varying reasons the small farmers leave the farm and move to the mill village. Some have been unsuccessful as farmers. Some have been disheartened by poor crops or by low prices. * * * Whatever discontent with their conditions or desire for improvement exists is fostered by the labor agent, who is usually the head of a family which has been successful at the mill and who canvasses the country thoroughly and frequently. * * *

Some of the larger mills have sent agents into the mountains and secured a goodly number of mountain farmers. Mills in western

[1] Vol. I, Cotton Textile Industry, p. 118.

North Carolina, mills at Spartanburg, Greenville, and other large towns in upper South Carolina, and mills in northern Georgia and northeastern Alabama were found to have many mountain people among their employees. Mountaineers were not found at any great distance from the mountains, however, except occasionally among migratory families.

Attempts to import mountaineers in large numbers have usually proved unsatisfactory. One mill in South Carolina secured a carload of people, about eight families, at one time. Of these only one family remained at the mill. Another mill, which doubled its capacity in 1896, brought 1,295 individuals from the North Carolina mountains at one time, but the experiment was not successful. * * * In the mill the teaching of so large a green force presented great difficulties, and taken all in all the result of the experiment was most demoralizing. Many of these families soon became discontented by their slow progress and because of changed conditions of living and they gradually moved away.[1]

Some of the cotton-mill families, it was found, remain at the mill during the winter months only and return to the farm each spring in time to begin its cultivation, while others return to the farm at intervals of a few years. The people who have lived in the mountainous section are quite likely to go back to the mountains during the hot months.

MOUNTAINEERS IN THE MILL.

A particular study was made in the mountain regions from which a part of the labor forces of the cotton mills was recruited as to the conditions of life among the class from which this labor comes. Among the poorer class of farmers in the remote mountain districts extreme poverty and hard conditions of life were found. Living isolated in mountain coves, eking out, in many cases, a wretched existence from small and barren patches of land, with few or no facilities either for the education of their children or anything approaching a normal social development, the comfort of this class and the opportunity for the education of their children could not fail to be improved by their migration to industrial communities. The coming to the cotton mills works a greater change in the living and housing conditions of this class of operatives than in the case of employees secured from the lowland farms in the localities near the cotton mills. Data were secured concerning 844 of these mountain families, which showed that the majority were living in the crudest and most primitive manner.[2]

South Carolina has made some effort to secure direct immigration from Europe as a means of supplying the demand for labor both on farms and in the mills, but the experiment was unsatisfactory and was soon given up.

[1] Vol. I, Cotton Textile Industry, pp. 120, 121. [2] Idem, p. 123.

CONJUGAL CONDITION OF EMPLOYEES.

Detailed information as to age, sex, and conjugal condition was secured for 21,915 employees in New England and for 31,220 in the southern mills. The difference in the customary age of beginning work in the two sections, however, makes any comparison between the totals for the two groups misleading, since in the South there are a number of children at work at 12 and 13 years of age, who weight unduly the number of the single. Considering only those who have reached or passed 16,[1] the following table shows the extent to which in the mills studied the employees were or had been married:

NUMBER AND PER CENT OF MALE AND OF FEMALE EMPLOYEES 16 YEARS OF AGE AND OVER OF EACH CONJUGAL CONDITION IN COTTON MILLS INVESTIGATED.

Conjugal condition.	Male.		Female.	
	Number.	Per cent.	Number.	Per cent.
NEW ENGLAND GROUP.				
Single	3,560	55.8	9,161	65.8
Married	2,724	42.7	4,110	29.6
Widowed, divorced, separated, or deserted	96	1.5	626	4.5
Total	6,380	100.0	13,896	100.0
SOUTHERN GROUP.				
Single	5,070	54.3	8,192	65.8
Married	4,187	44.9	3,470	27.9
Widowed, divorced, separated, or deserted	74	.8	791	6.3
Total	9,331	100.0	12,453	100.0

For both sexes the two groups of workers show a close similarity in their distribution by conjugal condition. The northern group shows a slightly larger proportion of married women with husbands presumably able to work, and the southern group shows a slightly larger proportion of widows or other married women deprived of the husband's support, but the proportion of single women in the two groups is practically identical. In both, too, the proportion of married women living with their husbands is impressively large, amounting to over one-fourth of all the female employees 16 years of age and over.[2]

In the southern mills, as already stated, practically all the female workers were white Americans, but in the New England mills, where a number of races were represented, the proportion of married women

[1] In the southern group 38 girls under 16 were married and 4 were widowed, divorced, deserted, or separated; in the northern group 4 under 16 were married, but none under that age were widowed or otherwise separated from their husbands.

[2] For comparison of proportion of married women engaged in different industries see Report on Woman and Child Wage-Earners, Vol. XVIII, pp. 27, 28.

at work differs considerably from one race to another. The following table shows the extent of this difference:

PROPORTION OF FEMALE EMPLOYEES 16 YEARS OF AGE AND OVER OF EACH CONJUGAL CONDITION IN NEW ENGLAND MILLS INVESTIGATED, BY RACE.

Race.	Total number.	Per cent single.	Per cent married.	Per cent widowed, divorced, separated, or deserted.
American	1,134	68.9	22.4	7.7
English	1,350	58.1	37.2	4.7
French Canadian	5,633	66.6	29.7	3.7
Irish	2,288	67.8	24.5	7.7
Italian	249	66.3	30.1	3.6
Polish	1,759	64.7	32.9	2.4
Portuguese	680	62.1	35.4	2.5
Other races	803	70.5	26.5	3.0
Total	13,896	65.9	29.6	4.5

It is difficult to account for the variations shown in the proportion of married women at work. Neither the age nor the occupational distribution seems to furnish any explanation. The fact remains that the English show the highest proportion of married women working, the Americans show the lowest, and the other races are ranged between; but whether this indicates a racial attitude toward the employment of married women or is explicable on other grounds can not be determined from the data at hand.

SUMMARY AS TO LABOR FORCE.

The investigation covered in the New England States 46 mills employing 33,030 hands, and in the South 152 mills, employing 48,305 hands. In both sections males outnumbered females among the employees, forming 54 per cent of the total in New England and 63.5 per cent in the South. Children under 16 formed 5.2 per cent of the working force in the New England mills and 20 per cent in the South. Excluding from consideration occupations in which women and children are not employed, females aged 16 or over formed 63 per cent of the northern workers and 40.1 per cent of the southern, while children under 16 were in New England 7.6 per cent and in the South 29.7 per cent.

The age distribution of the female workers was very different, 62.69 per cent of those in New England against 37.21 per cent of those in the South being 21 years of age and over. In the South the workers were practically all native-born Americans, while in the New England mills these constituted but 7.2 per cent of the total. In the northern group the French Canadians were the most numerous element, forming 41.8 per cent of the total, the Irish and the Polish

each formed one-eighth, the English were nearly one-tenth, and other races were but scantily represented. Of the female workers 16 years of age and over, 29.6 per cent in New England and 27.9 per cent in the Southern States were married and living with their husbands. Of the different races in the New England mills the English showed the largest proportion of married women.

EMPLOYMENT OF CHILDREN.

The importance as cotton-mill employees of children under 16 has been diminishing for a number of years in the North, and since 1900 has been decreasing in the South. The following figures show the extent of this decrease:

PER CENT WHICH CHILDREN UNDER 16 FORMED OF TOTAL COTTON-MILL OPERATIVES.

Year.	New England.	Southern States.
1880[1]	14.1	25.1
1900[1]	6.9	24.2
1900	6.7	25.0
1905	6.0	22.9

[1] In 1880 and 1900 males under 16 years and females under 15.

In the New England States their number as well as their proportion decreased during these 25 years, but in the Southern States the slight decrease in their proportion has been coincident with a rise in their numbers from 4,097 in 1880 to 27,571 in 1905.

The age and sex distribution of the children at work in the mills visited are shown for each section in the following table:

AGE AND SEX DISTRIBUTION OF CHILDREN UNDER 16.

Age.	New England group.			Southern group.		
	Male.	Female.	Total.	Male.	Female.	Total.
6 years					1	1
7 years				7	9	16
8 years				20	19	48
9 years				65	42	107
10 years	1	1	2	171	110	283
11 years	13	1	14	296	208	504
12 years	5	13	18	760	634	1,394
13 years	41	50	91	1,090	867	1,957
14 years	304	275	579	1,427	1,311	2,738
15 years	457	550	1,007	1,227	1,320	2,547
Others under 16				26	32	58
Total	821	890	1,711	5,090	4,585	9,675

The relative proportions of boys and girls are almost exactly reversed for the two sections, girls forming 52 per cent of the northern group, while boys form 52.6 per cent of the southern group.

OCCUPATIONAL DISTRIBUTION.

Their occupational distribution differs considerably between the two sections, although both doffing and ring spinning are the two most important children's occupations. The following table shows the per cent which they form of the workers in six specified occupations:[1]

PROPORTION CHILDREN UNDER 16 FORM OF TOTAL WORKERS IN SPECIFIED OCCUPATIONS.

Occupation.	New England group.			Southern group.		
	Male.	Female.	Total.	Male.	Female.	Total.
Doffers (spinning frame)	12.5	10.9	23.4	77.4	1.2	78.6
Ring spinners	3.1	10.2	13.3	5.6	46.5	52.1
Scrubbers and sweepers	26.0	4.2	30.2	50.7	1.7	52.4
Speeder tenders	.1	.7	.8	2.2	2.0	4.2
Spoolers		8.6	8.6	.3	15.6	15.9
Weavers	.6	.9	1.5	2.9	3.4	6.3
Other occupations	8.9	4.6	13.5	15.1	10.3	25.4

This table is of special interest from its bearing on the contention sometimes brought forward that the employment of children is a physical necessity, since the fingers and hands of adults being larger and less pliant can not do the same work. In the northern mills visited the only occupation in which employees under 16 formed as much as one-fourth of the workers was scrubbing and sweeping, in which small and pliant hands are conspicuously unnecessary. In doffing small hands are an advantage, as they can more easily slip in between the spindles; but although nearly four-fifths of the southern doffers are under 16, almost precisely the same proportion in the northern mills were over that age. In ring spinning, where, if in any occupation, pliant fingers would be an advantage, less than one-sixth of the New England operatives were under 16. It seems quite evident that no physical necessity exists for the employment of children in any of these occupations.

For the most part the work done by these children is not in itself heavy. Generally it must be done standing. In some occupations there are occasional opportunities for sitting. Doffing leaves the worker unoccupied from one-third to one-half of the time, but the other occupations show no such vacant periods. The dust and lint in the air, the constant watchfulness required in many of the processes, the nerve-racking noise of the machinery, and the hot, moist atmosphere are the principal drawbacks to the work.

[1] The number of children in each of these occupations and the per cent they form of the total group of child employees are shown in the table already given, p. 41.

ILLEGAL EMPLOYMENT OF CHILDREN IN NEW ENGLAND MILLS.

CHILDREN UNDER LEGAL AGE.

Two forms of illegality are considered—the employment of children under legal age and the employment of children without the certificates required by law. In the four New England States visited 14 was the legal age for beginning work in factories. New Hampshire permitted the employment of children 12 years old when school was not in session, but this was the only exception to the 14-year limit. The following table gives sundry data concerning the children found at work below the legal age in New England:

NUMBER AND PER CENT OF COTTON MILLS INVESTIGATED IN THE NEW ENGLAND GROUP EMPLOYING CHILDREN UNDER LEGAL AGE (14 YEARS), AND NUMBER AND PER CENT OF SUCH CHILDREN, COMPARED WITH TOTAL CHILDREN UNDER 16 YEARS, BY STATES.

[In New Hampshire a child 12 years of age and over may be legally employed when school is not in session.]

State	Establishments investigated.	Establishments employing children under legal age (14 years).		Total children under 16 years employed in all establishments investigated.	Children employed under legal age (14 years).	
		Number.	Per cent.		Number.	Per cent of total children.
Maine	7	7	100.0	497	64	12.9
New Hampshire	7	[1] 2	28.6	111	[2] 5	4.5
Massachusetts	22	1	4.5	606	1	.2
Rhode Island	10	5	50.0	498	50	10.0
Total	46	[1] 15	34.8	1,711	[2] 120	7.0

[1] Not including 1 establishment employing children under 14 years of age when school was not in session.
[2] Not including 8 children under 14 years of age employed when school was not in session.

Maine makes the worst showing here, violations of the law being found in every factory visited, and more than half of the children employed under age being in this State. In some mills the proportion of under-age children was decidedly large. Thus, in one which employed only 34 children under 16 there were 15, or 44.1 per cent, who were under 14. This was the highest proportion of illegally employed children found in any New England mill, the next being 28.9 per cent in a Rhode Island mill, in which 33 children were working under age. Only 1 child under 14 was found at work in Massachusetts. In this case the employer had on file her age and schooling certificate, so that he had not been guilty of any violation of the law. Investigation, however, showed that the child was really only 13, and that the certificate had been issued without due care.

The ages of the children thus illegally employed were as follows:

NUMBER OF CHILDREN OF EACH AGE UNDER THE LEGAL AGE (14 YEARS) EMPLOYED IN COTTON MILLS INVESTIGATED IN THE NEW ENGLAND GROUP, BY STATES.

Age.	Maine.	New Hampshire.	Massachusetts.	Rhode Island.	Total.
10 years	2	.....	.....	.....	2
11 years	10	2	.....	2	14
12 years	11	.....	.....	7	18
13 years	41	[1]8	1	41	[1]91
Total	64	[1]10	1	50	[1]125

[1] Including 5 children employed when school was not in session, and so legally employed.

The ages of the two children 10 years old were obtained from city birth records. One of these was nearly 11 at the time of the investigation. Both these children were employed in Maine, and it will be observed that of the 34 children below 13 years of age 23 were at work in that State. Of the 125 children at work under 14 nearly three-fourths (72.8 per cent) were 13 years old.

It must not be assumed that the above tables show the full extent to which children under legal age were employed in the establishments visited. To determine the extent of such employment was one of the most difficult tasks of the investigation. The mill officials almost invariably reported that they employed no children under the legal age. * * * Sometimes the true ages of children under 14 could be obtained from the parents, but this was frequently impossible, as parents were not disposed to admit the illegal employment of their children. Only when the birth records of the city showed the date of birth of the child could the age be determined with certainty, and as a large proportion of the children were foreign born, it was seldom possible to ascertain the full extent of the violation of the age law.[1]

CHILDREN WITHOUT CERTIFICATES.

Each of the four States covered by this study forbade the employment of children under 16 without an age or employment certificate. In Maine the proof of the child's age was to be presented to the employer, who was to retain it and issue to the child a certificate, a duplicate of which was to be sent to the factory inspector. This law has since been changed and the school authorities are now authorized to issue age and schooling certificates. In the other States the employer had no responsibility for issuing the certificate, but was expected to demand one from every child under 16 before employing him, to keep the certificate on file, and to return it to the child when the latter left his employ.

[1] Vol. I, Cotton Textile Industry, pp. 151, 152.

Thirty-nine mills were investigated as to their observance of these certificate laws, and of these 21 were found to have some children employed for whom they had no certificates. This was most common in Maine and Rhode Island, 6 mills in the first and 9 in the second State showing violations, while in the other two States only 3 mills apiece showed violations. Of the 1,283 children working in these mills 352, or 27.4 per cent, lacked certificates.

In the establishments visited the law was well observed in Massachusetts and fairly well observed in New Hampshire. In both Maine and Rhode Island the law was flagrantly violated. None of the establishments investigated on this point in these two States had certificates for all children as required, and in 3 establishments in each State more than half of the children 14 and 15 years old were without the certificates required by law. In these two States not only were many children employed without certificates, but some were employed on certificates which on their face were illegal or fraudulent.[1]

A number of devices were used for securing fraudulent certificates. In all four States a baptismal certificate is accepted as satisfactory proof of age, but in this investigation a number of such certificates were found in which the date had been altered, sometimes simply by crossing out the figures and writing others above and sometimes by more careful substitution.

In some communities in these States the opinion prevails to some extent that birth certificates for foreign-born children can be made to contain anything desired. A case is cited of a Portuguese girl at work at a mill in Massachusetts, who, according to her certificate, was two days less than 15 years old, yet she was only 4 feet and 1 inch tall and weighed only 67 pounds. She appeared to be not more than 10 or 11 years old. Other cases of the same character were observed in the same community, although none so pronounced as this one.[2]

Other instances were found, especially in Rhode Island, where children had used the birth certificates of older brothers or sisters in order to get their working papers, or where a child under age had obtained employment on the work certificate of some older child, borrowed or bought for the purpose. In such cases the employer may have complied with every legal requirement, yet the child is illegally employed.

ILLEGAL EMPLOYMENT OF CHILDREN IN SOUTHERN MILLS.

CHILDREN UNDER LEGAL AGE.

At the time of this investigation the laws of five of the Southern States visited forbade the employment of children under 12 years old. Mississippi had no child labor law. The laws of South Caro-

[1] Vol. I, Cotton Textile Industry, pp. 158, 159. [2] Idem, p. 160.

lina and Georgia excepted orphans, children of widows, and children of disabled fathers from the provisions of the law, if they were dependent upon their own labor for support. Georgia permitted the employment of such children at 10 years of age, and South Carolina had no age restriction for them. Since this investigation the age limit in Virginia has been raised to 14 years, in North Carolina to 13 with the employment of apprentices permitted at 12, and Mississippi has enacted a law forbidding the employment of children under 12.

The age limit laws in effect at the time of the investigation were openly and freely violated in every State visited. The following table shows the extent of these violations:

NUMBER AND PER CENT OF COTTON MILLS INVESTIGATED IN THE SOUTHERN GROUP EMPLOYING CHILDREN UNDER LEGAL AGE (12 YEARS) AND NUMBER AND PER CENT OF SUCH CHILDREN COMPARED WITH TOTAL CHILDREN UNDER 16, BY STATES.

[In South Carolina and in Georgia a child under 12 years of age who is an orphan, or whose mother is a widow, or whose father is disabled may be legally employed under certain conditions. Such children are not included in this table.]

State.	Establishments investigated.	Establishments employing children under legal age (12 years).		Total children under 16 employed in all establishments investigated.	Children employed under legal age (12 years).	
		Number.	Per cent.		Number.	Per cent of total children employed.
Virginia	4	2	50.0	483	9	1.9
North Carolina	59	44	74.6	2,347	202	8.6
South Carolina	36	[1] 33	[1] 91.7	3,302	[2] 405	[2] 12.3
Georgia	31	[3] 20	[3] 64.5	1,827	[4] 66	[4] 3.6
Alabama	13	8	61.5	1,167	71	6.1
Total	143	[5] 107	[5] 74.8	9,126	[6] 753	[6] 8.3

[1] Not including one establishment employing children under 12 years of age under legal exceptions.
[2] Not including 42 children under 12 years of age employed under legal exceptions.
[3] Not including two establishments employing children under 12 years of age under legal exceptions.
[4] Not including 41 children under 12 years of age employed under legal exceptions.
[5] Not including three establishments employing children under 12 years of age under legal exceptions.
[6] Not including 83 children under 12 years of age employed under legal exceptions.

In considering these figures it must be borne in mind that no child was entered as under 12 years old unless the age was admitted by the family of the child or was proved by indisputable evidence. Many others had all the appearance of being considerably below 12 years old, but as it was impossible to secure any record of their birth it was deemed necessary to take their age as it was given.

Nevertheless, the table shows a depressingly large number of children at work under 12 years of age. South Carolina led both in the number of such children and in the proportion they formed of all employees under 16.

In view of the situation in these States a question might be raised as to whether the child-labor laws had any force at all. Partly by

way of testing this a comparison was made between conditions in these States and in Mississippi. In the latter State nine mills were visited, employing 539 children under 16, of whom 113, or 21 per cent were under 12.

In Mississippi every establishment investigated employed children under 12 years of age. This was not true of any other State. * * * Of the total employees in the establishments visited, children under 12 constituted 5 per cent, a much higher proportion than in any other State. In the five States having child-labor laws 753 out of 9,126 children, or 8.3 per cent, were found to be under the legal age. If those under 12, but legally excepted are added, the total is 836, or 9.2 per cent. * * * In Mississippi 113 of the 539 children, or 21 per cent, were under 12 years of age. This again is a much higher proportion than in any other State.

It appears, therefore, that though the child-labor laws were found to be flagrantly violated in all Southern States visited having such laws, * * * yet these laws have had no little effect in reducing the number of child employees under 12 years of age. The industry in Mississippi is newer than in the other States, and this would account in part for the higher proportion of children. The difference, however, was too great to be accounted for in this way, and was without doubt due to the absence of law on the subject in Mississippi.[1]

The age distribution by States of the children under 12 is shown in the following table:

NUMBER OF CHILDREN OF EACH AGE UNDER 12 YEARS, ON PAY ROLLS, AND NUMBER NOT ON PAY ROLLS, EMPLOYED IN COTTON MILLS INVESTIGATED IN THE SOUTHERN GROUP, BY STATES.

[Only children admitted or positively proved to be under 12 are included in this table as under that age.]

Age.	Virginia.			North Carolina.			South Carolina.			Georgia.			Alabama.			Mississippi.			Total.		
	On pay roll.	Not on pay roll.	Total.	On pay roll.	Not on pay roll.	Total.	On pay roll.	Not on pay roll.	Total.	On pay roll.	Not on pay roll.	Total.	On pay roll.	Not on pay roll.	Total.	On pay roll.	Not on pay roll.	Total.	On pay roll.	Not on pay roll.	Total.
7 years	..	..	..	1	3	4	..	17	17	..	1	1	1	..	1	2	2	4	4	113	117
8 years	..	..	..	8	7	15	9	15	24	..	..	..	3	..	3	6	..	6	26	22	48
9 years	..	..	..	21	6	27	32	20	52	4	2	6	3	1	4	17	1	18	77	30	107
10 years	1	1	2	37	12	49	110	37	147	19	8	27	20	3	23	35	..	35	222	61	283
11 years	4	3	7	94	13	107	202	15	217	68	5	73	38	2	40	49	1	50	455	39	494
Total	5	4	9	161	41	202	353	104	457	91	16	107	65	6	71	109	4	113	784	165	949

[1] Including one child 6 years of age.

Of the 949 children under 12 shown here, 560 were boys and 389 were girls. A question naturally arises as to what such young children can do. One girl of 7 and two boys and six girls of 8 were ring spinners, while six boys of 8 were doffers. The distribution of the whole group among some of the leading occupations was as follows:

[1] Vol. I, Cotton Textile Industry, p. 188.

OCCUPATIONS OF CHILDREN UNDER 12 YEARS OF AGE EMPLOYED IN COTTON MILLS INVESTIGATED IN THE SOUTHERN GROUP.

Occupation.	Boys.	Girls.	Total.
Doffing	278	5	283
Ring spinning	49	246	295
Spooling	1	7	8
Weaving	6	4	10
Other occupations	226	127	353
Total	560	389	949

Two of the weavers were girls 10 years of age; the other two girls and all the boys were 11 years of age. The large proportion in "Other occupations" is partly accounted for by the fact that the occupations were not learned for the children whose names did not appear on the pay roll, and consequently they were perforce included in this group.

THE HELPER SYSTEM.

The 165 children under 12 whose names, as shown in the table given on page 55, did not appear on the pay rolls belonged to the class known as helpers. In a few cases a helper may mean a child who merely assists some member of the family before and after school and on Saturday. But this is not always, nor even often, the case.

Ordinarily the children tabulated as "not on pay roll" are employees who work as regularly as other workers and who are relied upon to do their share of work the same as are other employees. Because they are unquestionably under the legal age, however, and are admitted so to be, the employer refuses to place their names upon the books of the company, but raises no objection and does not refuse to give them work if some other member of the family can be induced to carry the helper's wages home.[1]

The manufacturer under such circumstances argues that he does not employ the child since he pays no wages to it. Some other member of the family is credited with the work and the employer shuts his eyes to the fact that a child under age is working regularly and steadily in his mill. Where the law provides that a child under a certain age "shall not be employed or suffered or permitted to work in or about any manufacturing establishment," the helper system does not afford a legal means of evading its terms, but up to the date of this investigation such a provision had been kept out of the child-labor laws in North and South Carolina, in which States the helper system was most in use.

It is impossible to say how extensively children were employed under this system. If a child's name was not on the pay roll the fact that it was at work in the mill was apt to remain unknown.

[1] Vol. I, Cotton Textile Industry, p. 189.

Most of the helpers listed in the above table came to the notice of the agents in an investigation carried on among certain mill families.

DIFFICULTIES IN WAY OF INVESTIGATION.

The tables given show the number of children at work who were proved to be under 12, but do not show the full number who were so. In 11 mills it was known that deliberate and determined efforts were made by mill officials to cover up the actual conditions in regard to child labor.

Children were discharged temporarily, sent home for a few hours or a few days, or hidden in entries, in water-closets, or in waste boxes—anywhere so that they would not be discovered by the agent when going through the mill. Of these facts proof was obtained in every case.[1] * * * When attempts were made to ascertain, independently of mill officials, the extent of the illegal employment of children, the agents were confronted with new difficulties. No proof of age was on file in the mill office. There was no register of births with city or town officials which could be consulted. Little or no use could be made of school enumerations or teachers' records, partly because they had not been compiled or kept with care and partly because of the migratory character of employees. In some cases where school children had been transferred from one room to another there was as much as two years' difference in the ages recorded. Ordinarily a visit to the family was the only method by which the true ages of children could be obtained.[2]

Even this method did not always bring out the truth, for frequently the parents, fearing that the agent had authority to forbid the child's employment if it were under legal age, would insist that it was 13, 14, or 15, when it had every appearance of being 10 or younger. In such cases, however, the parents' statement was accepted and the child put down as of the age they gave, unless some documentary proof, such as the record of its birth entered in a family Bible, could be found to disprove their assertions. Not infrequently, also, parents actually did not know the ages of their children.

CHILDREN WITHOUT CERTIFICATES OR AFFIDAVITS.

At the time of this investigation all of the Southern States visited except Virginia and Mississippi required something in the way of documentary proof of age, school attendance, or parental condition as an antecedent to employment. The disregard of these provisions was so general that no attempt was made to tabulate the violations; practically, it was the exception for the law to be regarded.

IMPROVEMENT IN SOUTHERN CONDITIONS SINCE INVESTIGATION.

Since this investigation was made the situation in regard to child labor in the Southern States has shown signs of improvement. Sev-

[1] Vol. I, Cotton Textile Industry, p. 193. [2] Idem, p. 194.

eral of the States have passed stronger laws, and in some at least an effort is being made to enforce the laws. The report of the Alabama inspector gives the most definite statement of what is being done to make child-labor legislation something more than a mere nominal concession to those who seek it.

According to the Alabama law now in force, children may begin work at 12, the parent's affidavit being the only proof of age required. But the law also provides that no child under 16 may be employed unless it attends school at least eight weeks in each year, six of which must be consecutive. As soon as any company employs a child it must file the child's affidavit of age with the probate judge of the county and within 10 days must send a copy to the State factory inspector. A careful system of filing and checking the affidavits thus received enables the inspector to keep track of the children at work and to avoid the duplications and omissions which often render the data compiled by such offices useless. As a method of preventing the employment of children under 12 the system, in the opinion of the inspector, has little value.

That this affidavit is absolutely worthless in so far as it shows the actual age of the child is shown by the fact that in numerous cases parents have, when moving from one establishment to another, given different dates of birth for the same child. * * * Since the department began to be more rigid in the enforcement of section 2 of the law, which requires eight weeks' school attendance during the year, a number of establishments have sent to this office corrected affidavits to be substituted for those on file in the office. On investigating the matter it was found that the corrected affidavits, without a single exception, increased the age of the child at least one and in some instances two years. It was also found that the corrected affidavit invariably gave the child's age as 16 years—just old enough to avoid this feature of the law.[1]

In order to enforce the educational requirement the inspector ruled that certificates, signed by teacher and principal, testifying that the child had attended school for the necessary time, must be filed with him before January 1, 1913. By comparing these certificates with the affidavits already on file it was possible to find what children had been employed in violation of this provision of the law during 1912. The report for 1912 contains a list of these children, numbering over 1,100, by name, with the warning that according to the terms of the law their employment hereafter until they reach the age of 16 is illegal, and that any establishment employing them will be prosecuted. It is evident that such intelligent and determined enforcement of the law as this must soon effect a decided improvement in the situation.

[1] Report of the Factory Inspector of the State of Alabama for the Year Ending Dec. 31, 1912, pp. 11, 15.

Incidentally, the Alabama factory inspector's report for 1912 affords a proof of the conservative nature of the findings of the Bureau of Labor's agents in their investigation of the cotton industry. These agents investigated 13 establishments in Alabama in 1907–8. In these 1,691 minors under 18 were employed. Using all the diligence they could to secure the real ages of these workers, the agents found the number and proportion in the one year age groups were as follows:

NUMBER AND PER CENT OF MINORS OF EACH AGE UNDER 18 YEARS IN 13 ALABAMA COTTON MILLS, AS FOUND BY THE AGENTS OF THE BUREAU OF LABOR, 1907–8.

Age group.	Number.	Per cent.	Age group.	Number.	Per cent.
12 and under	294	17.4	16	278	16.4
13	272	16.1	17	246	14.5
14	324	19.2			
15	277	16.4	Total	1,691	100.0

The Alabama State factory inspector's report for 1912 shows that the age distribution of the minors under 18 employed in the Alabama cotton mills during the three years 1910–1912 were as follows:

NUMBER AND PER CENT OF MINORS OF EACH AGE UNDER 18 YEARS IN ALABAMA COTTON MILLS, AS REPORTED BY THE STATE FACTORY INSPECTOR, 1910, 1911, AND 1912.

Age.	1910		1911		1912	
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
12 years	621	35.5	775	28.0	1,130	30.8
13 years	336	19.2	482	17.4	652	17.4
14 years	278	15.8	512	18.6	613	16.2
15 years	182	10.5	365	13.2	483	13.0
16 years	201	11.5	380	13.8	576	15.4
17 years	132	7.5	247	9.0	270	7.2
Total	1,750	100.0	2,761	100.0	3,734	100.0

It will be seen that the proportion in the youngest groups is decidedly larger in the official figures than in those secured during the investigation. Either the employment of young children has been increasing very rapidly in Alabama or the investigating agents worked with a care which made their data err on the side of conservatism.

SUMMARY OF EMPLOYMENT OF CHILDREN.

Child workers form a useful but by no means an indispensable part of the cotton-mill force. During the last 30 years while the number of cotton textile employees increased steadily, the proportion of children employed decreased steadily. In the Northern

States visited workers 16 years of age and over formed a majority of those engaged in the so-called children's occupations, disproving conclusively the contention that the slender and supple fingers of children are necessary in these occupations. Violations of the child-labor law were discovered in both sections. In the New England States the employment of children 14 or 15 years old without the certificates required by law was the commonest offense. Some instances were found in which children under the legal age were employed in defiance of the law, and some others in which children under age were employed on certificates which were plainly fraudulent. It was suspected, though not proved, that this situation existed in a number of other cases. In the South the legal provisions relating to certificates were practically ignored and violations of the age-limit laws were frequent and conspicuous.

HOURS OF LABOR, OVERTIME, AND NIGHT WORK.

MAXIMUM LEGAL HOURS, BY STATES.

At the time of this investigation the maximum hours of labor permitted by law were, for each State included in the study, as follows:

Maine, 60 hours for all females and for males under 16.

New Hampshire, 58 hours for all females and for males under 18.

Massachusetts, 58 hours for all females and for males under 18.

Rhode Island, 58 hours for all females and for males under 16.

Virginia, 60 hours for all females and for males under 14.

North Carolina, 66 hours for all persons under 18, except machinists, etc.

South Carolina, 60 hours for all persons except machinists, etc.

Georgia, 66 hours for all persons under 21 except machinists, etc.

Alabama, 60 hours for children under 14.

Mississippi, no restrictions at time of investigation.

MILLS EXCEEDING MAXIMUM LEGAL HOURS.

In the New England group only one mill was found operating more hours per week than the legal maximum. This was a mill in Maine employing 275 hands, which ran 61.8 hours per week. In the southern group two mills in Alabama employing 660 persons were operating, one 66 hours 30 minutes, and the other 67 hours 15 minutes a week. In South Carolina 17 mills were working more than 60 hours a week, but only three of these were investigated after January 1, 1908, at which time the 60-hour law became effective.

The hours of individual employees often varied widely from those during which the mill operated. Illness, slack work, a delay in securing material, an accident to his machine, or staying out of the

mill for some personal reason might reduce the worker's weekly hours to much below the regular hours for the mill.

EXTENT OF OVERTIME AND NIGHT WORK.

Overtime work was not common in the New England mills investigated, only four mills being found which frequently required overtime. In the Southern States 16 mills were found in which it was frequently required. Night work was found only in North and South Carolina. In the first State 28 and in the second 4 establishments were found regularly employing women or children at night. The following figures show the age and sex of the nightworkers:

NUMBER OF EMPLOYEES ENGAGED AT NIGHT WORK IN SOUTHERN MILLS, BY AGE AND SEX.

	Total number.	16 years of age and over.		Under 16 years.	
		Male.	Female.	Male.	Female.
North Carolina (28 establishments)	1,722	874	421	223	214
South Carolina (4 establishments)	343	155	76	69	43

In the majority of these mills it was customary to work 12 hours a night five nights in the week. Two mills in North Carolina were found in which night employees frequently worked in the daytime in addition to their regular night work and where day employees frequently worked at night after a full day's work.

In one of these mills the day shift worked 66 hours per week and the night shift 60 hours. Owing to a scarcity of help, dayworkers were frequently requested to return to the mill immediately after supper and work until midnight, and frequently some one was sent to the homes of employees early in the evening or at midnight to request dayworkers to come and work half of the night. Some employees usually declined to do overtime work. Others worked alternate nights as a regular custom.[1]

EARNINGS OF OPERATIVES, AS SHOWN BY PAY ROLLS.

In order to secure accurate data in regard to the earnings of employees in cotton mills transcripts were made of the pay rolls of each of the establishments investigated, showing for each employee, in occupations in which women and children worked, the name, occupation, sex, hours worked, and earnings in a representative pay period. This information was obtained from 44 mills in the New England States and 151 mills in the Southern States.

The following table shows the classified weekly earnings of these employees by sex and age:

[1] Vol. I, Cotton Textile Industry, p. 290.

NUMBER AND PER CENT OF EMPLOYEES EARNING CLASSIFIED AMOUNTS IN A REPRESENTATIVE WEEK IN COTTON MILLS INVESTIGATED, BY SEX AND AGE.

NUMBER.

Classified weekly earnings.	Under 12 years.		12 and 13 years.		14 and 15 years.		16 and 17 years.		18 to 20 years.		21 years and over.		Total.	
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
NEW ENGLAND GROUP.														
Under $2....	2	1	5	8	50	55	42	79	46	81	146	221	291	445
$2 to $2.99....	.....	.....	2	7	63	80	63	87	46	109	135	231	309	514
$3 to $3.99....	1	.....	9	11	106	162	95	222	109	258	190	526	510	1,179
$4 to $4.99....	.....	.....	5	13	199	164	129	285	91	308	266	844	690	1,614
$5 to $5.99....	.....	.....	3	3	144	144	187	337	180	460	353	1,174	867	2,118
$6 to $6.99....	1	.....	1	4	84	114	144	279	182	544	451	1,297	863	2,238
$7 to $7.99....	.....	.....	.....	.....	56	40	110	155	125	432	436	1,335	727	1,962
$8 to $8.99....	.....	.....	.....	.....	21	17	30	95	70	266	434	1,006	555	1,384
$9 to $9.99....	.....	.....	.....	.....	7	11	38	51	71	204	492	990	608	1,256
$10 to $10.99..	.....	.....	.....	.....	3	2	13	31	51	117	459	740	526	890
$11 to $11.99..	.....	.....	.....	.....	3	3	4	11	37	41	433	422	477	477
$12 and over..	.....	.....	.....	.....	.....	2	4	6	40	40	790	460	834	508
Total...	4	1	25	46	736	794	859	1,638	1,048	2,860	4,585	9,246	7,257	14,585
SOUTHERN GROUP.														
Under $2....	145	106	368	363	394	361	159	283	177	326	483	602	1,726	2,041
$2 to $2.99....	133	80	395	341	383	401	143	285	113	322	297	552	1,464	1,981
$3 to $3.99....	129	53	580	354	706	604	268	458	155	498	419	799	2,257	2,766
$4 to $4.99....	52	34	380	254	647	560	334	574	257	696	541	965	2,211	3,085
$5 to $5.99....	5	14	64	111	263	374	242	528	242	657	743	1,063	1,559	2,747
$6 to $6.99....	5	1	25	51	146	223	193	336	271	491	884	981	1,524	2,083
$7 to $7.99....	.....	1	7	15	44	74	74	129	214	250	791	704	1,130	1,173
$8 to $8.99....	1	1	.....	1	19	23	33	48	119	114	663	422	835	609
$9 to $9.99....	.....	.....	.....	2	5	7	26	17	80	61	584	250	695	337
$10 to $10.99..	.....	.....	1	.....	1	2	4	8	48	18	381	131	435	159
$11 to $11.99..	.....	.....	.....	.....	1	1	4	1	24	8	212	44	241	54
$12 and over..	.....	.....	.....	.....	.....	.....	1	1	15	7	245	23	261	31
Total...	470	290	1,820	1,492	2,609	2,630	1,481	2,668	1,715	3,450	6,243	6,536	14,338	17,066

PER CENT.

Classified weekly earnings.	Under 12 years.		12 and 13 years.		14 and 15 years.		16 and 17 years.		18 to 20 years.		21 years and over.		Total.	
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
NEW ENGLAND GROUP.														
Under $2....	50.0	100.0	20.0	17.4	6.8	6.9	4.9	4.8	4.4	2.8	3.2	2.4	4.0	3.0
$2 to $2.99....	.....	.....	8.0	15.2	8.6	10.1	7.3	5.3	4.4	3.8	3.0	2.5	4.3	3.5
$3 to $3.99....	25.0	.....	36.0	23.9	14.4	20.4	11.0	13.5	10.4	9.0	4.2	5.7	7.0	8.1
$4 to $4.99....	.....	.....	20.0	28.3	27.0	20.6	15.0	17.4	8.7	10.8	5.8	9.1	9.5	11.1
$5 to $5.99....	.....	.....	12.0	6.5	19.6	18.1	21.8	20.6	17.2	16.1	7.7	12.7	11.9	14.5
$6 to $6.99....	25.0	.....	4.0	8.7	11.4	14.4	16.8	17.0	17.4	19.0	9.8	14.0	11.9	15.3
$7 to $7.99....	.....	.....	.....	.....	7.6	5.0	12.8	9.5	11.9	15.1	9.5	14.4	10.0	13.5
$8 to $8.99....	.....	.....	.....	.....	2.9	2.1	3.5	5.8	6.7	9.3	9.5	10.9	7.6	9.5
$9 to $9.99....	.....	.....	.....	.....	.9	1.4	4.4	3.1	6.8	7.1	10.7	10.7	8.4	8.6
$10 to $10.99..	.....	.....	.....	.....	.4	.3	1.5	1.9	4.8	4.1	10.0	8.0	7.3	6.1
$11 to $11.99..	.....	.....	.....	.....	.4	.4	.5	.7	3.5	1.5	9.4	4.6	6.6	3.3
$12 and over..	.....	.....	.....	.....	.....	.3	.5	.4	3.8	1.4	17.2	5.0	11.5	3.5
Total...	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
SOUTHERN GROUP.														
Under $2....	30.8	36.6	20.2	24.3	15.1	13.7	10.7	10.6	10.3	9.5	7.7	9.2	12.0	11.9
$2 to $2.99....	28.3	27.6	21.7	22.9	14.7	15.2	9.7	10.7	6.6	9.3	4.8	8.4	10.2	11.6
$3 to $3.99....	27.4	18.3	31.8	23.7	27.1	23.0	18.1	17.2	9.0	14.4	6.7	12.2	15.8	16.2
$4 to $4.99....	11.1	11.7	20.9	17.0	24.8	21.3	22.5	21.5	15.0	20.2	8.7	14.8	15.4	18.1
$5 to $5.99....	1.1	4.9	3.5	7.5	10.1	14.2	16.3	19.8	14.1	19.1	11.9	16.3	10.9	16.1
$6 to $6.99....	1.1	.3	1.4	3.4	5.6	8.5	13.0	12.6	15.8	14.2	14.2	15.0	10.6	12.2
$7 to $7.99....	.....	.3	.4	1.0	1.7	2.8	5.0	4.8	12.5	7.3	12.7	10.8	7.9	6.9
$8 to $8.99....	.2	.3	.....	.1	.7	.9	2.2	1.8	6.9	3.3	10.6	6.5	5.8	3.6
$9 to $9.99....	.....	.....	.....	.1	.2	.3	1.8	.7	4.7	1.8	9.3	3.8	4.9	2.0
$10 to $10.99..	.....	.....	.1	.....	(1)	.1	.3	.3	2.8	.5	6.1	2.0	3.0	.9
$11 to $11.99..	.....	.....	.....	.....	(1)	(1)	.3	(1)	1.4	.2	3.4	.7	1.7	.3
$12 and over..	.....	.....	.....	.....	.....	.....	.1	(1)	.9	.2	3.9	.3	1.8	.2
Total...	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

[1] Less than one-tenth of 1 per cent.

This table shows both the influence of age on wages and the difference in earnings in the two sections. The children under 14 employed in New England are too few to permit any fair comparison between their earnings and those of the children of the same age groups in the South. Among those of the older age groups earnings range distinctly higher in the New England States.

As between the sexes it is noticeable that, while in almost every case the males show the larger proportion in the highest-earnings groups, the proportion of each sex reaching a moderate wage, such as $5 a week, is often nearly the same, and occasionally, especially among the younger workers, shows a slight excess on the side of the females. Taking $5 as the dividing line, the proportion in the various age and sex groups earning as much or more were as follows:

PER CENT OF EMPLOYEES EARNING $5 A WEEK AND OVER IN A REPRESENTATIVE WEEK IN COTTON MILLS INVESTIGATED, BY SEX AND AGE.

	Per cent 14 and 15 years of age.	Per cent 16 and 17 years of age.	Per cent 18 to 20 years of age.	Per cent 21 years and over.	Per cent of all ages.
NEW ENGLAND GROUP.					
Males	43.2	61.8	72.1	83.8	75.2
Females	42.0	59.0	73.6	80.3	74.3
SOUTHERN GROUP.					
Males	18.3	39.0	59.1	72.1	46.6
Females	26.8	40.0	48.6	55.4	42.2

This table shows the relation between the sections as well as between the sexes. In the North the proportion earning $5 and over is much more nearly the same for each sex than in the South, and for every group the proportion above this dividing line is larger. If some higher rate of earnings is taken, the difference between the two sections is even more marked. Thus the proportion of those 18 to 20 years of age earning $7 a week or more is for the New England group, males 37.5 per cent, females 38.5 per cent, and for the southern group, males 29.2 per cent, females 13.3 per cent. In general it may be said, first, that the earnings of all the workers studied were noticeably higher in the Northern than in the Southern States considered, and, second, that the earnings of female workers approach those of the male workers much more nearly in the New England than in the Southern States. Presumably both these differences are closely related to the kinds of work done in the two sections. The finer work of the New England mills calls for a skill and deftness which women can acquire, while the coarser work of the southern mills needs less skill but does in some occupations call for more strength.

In both sections there was considerable difference between the full-time rates of pay and the actual average earnings. The following table shows these differences for six of the leading occupations:

AVERAGE ACTUAL AND FULL-TIME (COMPUTED) EARNINGS IN A REPRESENTATIVE WEEK OF MALE AND FEMALE EMPLOYEES 16 YEARS OF AGE AND OVER IN THE NEW ENGLAND AND IN THE SOUTHERN MILLS INVESTIGATED.

Occupation.	44 New England mills.				151 southern mills.			
	Males.		Females.		Males.		Females.	
	Actual earnings per week.	Computed full-time earnings per week.	Actual earnings per week.	Computed full-time earnings per week.	Actual earnings per week.	Computed full-time earnings per week.	Actual earnings per week.	Computed full-time earnings per week.
Doffers	$5.62	$6.77	$4.85	$6.07	$4.05	$5.08	$2.86	$4.70
Ring spinners	5.63	6.77	6.17	7.36	4.41	5.96	4.54	5.71
Scrubbers and sweepers	5.32	6.02	4.74	5.66	4.15	5.08	2.96	3.76
Speeder tenders	8.44	9.64	7.67	8.88	6.38	8.21	5.64	7.09
Spoolers	.....	.....	5.79	6.77	4.85	6.08	4.39	5.71
Weavers	8.76	9.93	7.85	8.99	6.76	8.53	5.82	7.21

The weavers are in both sections the best paid workers, but for both sexes the actual average earnings of weavers in the New England mills are higher than their theoretically possible earnings in the southern mills. Speeder tending ranks next in possible earning power. Ring spinning is the one occupation in which the female workers showed higher actual as well as higher possible earnings than the male.

FINES AND OTHER DEDUCTIONS.

Of the 46 cotton mills which were investigated in New England 40, and of the 152 investigated in the South 100 imposed fines on employees. The causes for which employees were fined and the number of mills fining for each cause were as follows:

NUMBER OF MILLS IMPOSING FINES FOR CERTAIN CAUSES.

Fines imposed for—	Number of mills.	
	New England group.	Southern group.
Bad work	34	87
Absence from work	.....	6
Leaving without notice	1	7
Misconduct	1	12
Damage to property	5	51
Other causes	2	9

The most prevalent cause for fines was bad work. The weavers were apt to suffer more than any other class of workers from this

cause. If a loom without a stop-motion attachment is not stopped immediately upon the breakage of a thread a noticeable defect in the cloth results, and as a weaver may have a number of looms to attend it requires close watchfulness not to overlook a broken thread occasionally. Other small defects, such as an oil spot on the cloth, for instance, are sufficient ground for classing a cut of cloth as "seconds" and fining the weaver.

Fines varied according to the amount of damage or according to the rules or custom of the mill, the amount of a fine being usually left to the judgment of the overseer or second hand. In many cases it was half the price and in other the entire price of weaving the cut. In some cases it was the difference in the wholesale price of first-grade cloth and "seconds."[1]

Fines for poor work are imposed upon others than weavers, but are not usually so heavy.

Fines for damage to property include those for breaking window-panes or electric light bulbs and for injury to machinery or the product. Of the 5 mills in New England and of the 51 in the South that imposed fines for this cause, 4 in New England and 16 in the South did not impose fines unless the damage was caused willfully. It will be noticed that a much larger proportion of mills in the South than in New England imposed fines for misconduct and for damage to property.

This is due largely to the fact that younger boys were employed in southern mills than in northern mills. In the South doffers get into mischief while they are idle between doffs. In the North doffers have less idle time, usually having sweeping or other work to do between doffs.[2]

In the South the cotton-mill owners were almost without exception the owners also of the houses in which their operatives dwelt, and it was the universal custom to deduct the house rent from an employee's earnings before paying them over. Where there are company stores the store accounts of operatives are, as a rule, deducted from their earnings on each pay day. In some mills the company employs a doctor and deductions for his services were made before earnings were paid over to the employee.

A custom of making discounts from earnings advanced in money before pay day prevails in many southern mills, and in most cases the discount is 5 per cent. This charge falls heaviest upon the poor, the ones who must have the money as fast as they earn it and who can least afford the drain. The system is especially demoralizing to the intemperate or extravagant. In many mills pay day is every other week and in some of these earnings for one week, and in others

[1] Vol. I, Cotton Textile Industry, p. 334. [2] Idem, p. 335.

earnings for two weeks are held back. Thus an employee may be required to work for from three to four weeks before drawing any pay. This almost necessitates his asking an advance, and when he has once made a beginning in this direction it is almost inevitable that he should continue.

PREMIUMS.

Much less extensive than the system of fining in cotton mills is that of premium giving. Premiums were given to employees in 3 of the 46 mills investigated in New England and in 60 of the 152 mills investigated in the South.

Premiums were offered for a better quality of work, for increased output, and for regularity of attendance. Of these, increased production was most generally chosen as the cause of the premium.

THE COTTON MILL AND WORKING CONDITIONS.

The cotton mills visited were practically all built of brick or stone. Conditions differed widely, according to the age of the building. In general, light in the weaving rooms was good, but elsewhere no general statement could be made. Ventilation was apt to be poor. Sixteen of the 46 New England mills and 28 of the 152 studied in the South had ventilating systems, while the others relied upon open windows, openings in the roof, and the like. The temperature of the mills was often high, and in certain rooms the humidity was excessive. Dust and lint abounded in the picker rooms and card rooms, in the latter of which women and children are often employed, though they are not engaged in carding. Lint is given off in all the processes up to and including spinning; thereafter relatively little is given off. Dust and lint can be kept down by frequent sweeping, scrubbing, and cleaning, but in most of the mills visited there was an objectionable and wholly unnecessary amount of both in the atmosphere.

Fire escapes were general in the North, but less so in the South, where of 63 mills over two stories in height only 9 were provided with fire escapes. Wash rooms for female workers were not common, being found in only 13 of the northern and 18 of the southern mills. Dressing rooms were rarer still, only 5 mills in the North and 3 in the South being equipped with them. Toilet accommodations were diverse. Of the New England mills, in 91.3 per cent such accommodation was sufficient, in 45.7 per cent there was reasonable privacy of approach, in 50 per cent the toilets were in good condition as to cleanliness, and in 84.8 per cent they were so situated as not to affect the air of the workrooms. Of the 151 southern mills from which reports were received, in 88.4 per cent toilet ac-

commodations were sufficient, in 42.4 per cent there was reasonable privacy of approach, in 18.5 per cent the toilets were in good condition as to cleanliness, etc., and in 64.9 per cent they were so situated as not to affect the air of the workrooms.

PHYSICAL STRAIN ON OPERATIVES.

The only occupation in which women are engaged which requires much lifting is that of speeder tender, in which bobbins of roving must be lifted to the top of the speeder frames, from 5½ to 6 feet above the floor. The bobbins to be placed on the first speeder vary in weight from 1 to 4 pounds. They are heavier when coarse yarn is made; hence in the South men are generally employed in this occupation, and in New England, where fine yarns are spun, women are more commonly employed.

The only occupations in which women are engaged which require much bending over are beam warping and, to a less extent, weaving. There is no other occupation in which women have strained positions in working. Children are not required to lift heavy weights or to assume strained positions in any occupation. On the other hand, the noise of the machinery is nerve racking, the work in many occupations requires close and constant attention, and in the spinning and weave rooms the air is hot and moist, often to an unnecessary and injurious degree.

FAMILY CONDITIONS AND SOURCES AND AMOUNT OF FAMILY INCOME.

GENERAL CHARACTER OF FAMILIES.

In order to study the family conditions of those families having women or children employed in the cotton mills, the names of a certain number of woman and child employees were taken from the pay rolls of each of the establishments investigated and visits were made to the homes, where schedules were secured with detailed information in regard both to the families as a whole and to the individual workers. As a general rule all the working members of these families were found to be employed in the cotton mills. There were occasional exceptions to this, especially in the larger towns of the New England States, where opportunities for employment are more numerous and varied than in the mill towns of the South, but these were not frequent enough to offer any contradiction to the general statement. The cotton mill gives employment to all ages, and children may grow up in the mills, marry other mill workers, keep on in its employ until old age overcomes them, and bring up their children to carry on the same program. Hence the cotton-mill family is a distinct type.

COMPOSITION OF FAMILIES; EMPLOYMENT OF MEMBERS.

In New England 854 families were visited, which averaged 6.5 members and 3.5 wage earners per family. In 83 per cent of these families the father and in 93 per cent the mother was living with the family. In the South 1,567 families were visited which averaged 6.6 members and 3.8 wage earners per family. In 76.5 per cent of these families the father and in 96.9 per cent the mother was living with the family. In the northern group 91.3 per cent of the fathers and 20.5 per cent of the mothers living with their families were contributing to the family support; in the southern group these proportions were 91.2 per cent and 16.6 per cent. The proportion of children in the various age groups at work was as follows:

PER CENT OF CHILDREN AT WORK, BY AGE.

Age group.	New England group.	Southern group.
Males 16 years of age and over	96.7	96.9
Females 16 years of age and over	95.3	93.9
Children 14 and 15 years of age	83.8	96.2
Children 12 and 13 years of age	12.0	37.6
Children under 12 years of age	.1	15.6

In both sections the employment of children 16 years of age and over is almost universal, and in both the employment of the daughters of the family is very nearly as common as of the sons. The employment of children 14 and 15 years old is as common in the southern group as the employment of children 16 years and over, but in the northern group, while it is evidently quite the accepted thing to put such children to work, one-sixth of their number were not wage earners. The employment of children under 14 was, of course, illegal in the Northern States, yet 50 such children were found at work there. Two of these children belonged to families whose heads were native born of foreign parents, the remainder to families whose heads were foreign born of foreign parents. Only two of the New England families having children under 12 years old had such children at work—one child to each family—while of the 1,161 families in the South having children under 12 years old 399 had such children at work to the number of 476.

SOURCES AND AMOUNT OF FAMILY INCOME.

The incomes of the families studied varied widely, according to the difference in contributing members. These variations are shown in the following table:

AVERAGE NET INCOME PER FAMILY, ACCORDING TO CLASSES OF PERSONS CONTRIBUTING.

	New England group.	Southern group.
Fathers at work	$1,193	$900
Mothers at work	934	672
Male children 16 years and over at work	1,368	989
Female children 16 years and over at work	1,242	901
Children 14 and 15 years of age at work	1,167	910
Children 12 and 13 years of age at work	1,071	913
Children under 12 years of age at work	593	847
Average net income for all families	1,134	822

In both groups the families having mothers at work show incomes decidedly below the average for all families considered. In the southern group this difference is really greater than the figures show because in about half the families with working mothers the income was so exceedingly low as to bring down unduly the average for all families. A better idea of the relative poverty of families with working mothers is gained by contrasting their average income with that of families having wage earners of other classes. The families having children under 12 at work show the least difference, but even they have on an average $175 more per year and in every other group the difference is over $200. Among the northern families the only group having a conspicuously low income is that in which children under 12 were at work; but as there were only two such families, no weight can be attached to these figures. It is worth noticing that in both the northern and southern families those having male children 16 years of age and over at work are noticeably more prosperous than the others.

The proportion of the family income contributed by each class of workers was as follows:

PER CENT OF FAMILY INCOME CONTRIBUTED BY EACH CLASS OF WORKERS.

	New England group.	Southern group.
Fathers	[1] 37.7	[1] 34.0
Mothers	32.4	27.9
Male children 16 years of age and over	31.1	27.3
Female children 16 years of age and over	42.6	35.2
Children 14 and 15 years of age	18.7	22.9
Children 12 and 13 years of age	14.3	17.6
Children under 12 years of age	3.6	13.5

[1] These per cents apply in each case only to the incomes of families having workers of the specified class.

These figures tend to confirm the assertion that the cotton-mill family depends on a family wage for its existence and that the women and children must work if the family is to survive. The father contributes less than two-fifths of the income, the daughters

of 16 and over exceed him in the importance of their contributions, and mothers and sons of 16 and over, when either are working, come very close to him in the proportion of the income they furnish.

In calculating the family income it was assumed that fathers and mothers at work and also children under 16 turned all their earnings into the common fund, but when children 16 years of age and over were at work careful inquiry was made as to what portion of their earnings was paid in to the family. The following table summarizes the data collected on this point:

AVERAGE INDIVIDUAL EARNINGS OF CHILDREN OF EACH SEX 16 YEARS OF AGE AND OVER AT WORK, AVERAGE CONTRIBUTIONS OF SUCH CHILDREN TO FAMILY INCOME, AND PER CENT OF THEIR EARNINGS SO CONTRIBUTED, BY NATIVITY OF HEADS OF FAMILIES.

Nativity of head of family.	Number of families with—		Children 16 years and over at work.					
	Male children 16 years and over at work.	Female children 16 years and over at work.	Average earnings of—		Average amount contributed to family by—		Per cent of earnings contributed to family by—	
			Males.	Females.	Males.	Females.	Males.	Females.
NEW ENGLAND GROUP.								
Native born, native parents	14	26	$412	$302	$283	$282	68.7	93.4
Native born, foreign parents	23	34	355	307	318	285	89.6	92.8
Foreign born	352	542	362	323	299	313	82.6	96.9
Total	389	602	364	321	300	310	82.4	96.6
SOUTHERN GROUP.								
Native born, native parents	641	886	267	227	194	211	72.7	89.0

These figures show clearly that in each nativity and race group, in New England and in the South alike, the females contributed a much larger proportion of their earnings to the family support than did the males. To such an extent is this true that though the males invariably averaged higher earnings than the females, yet the average amount they contributed to the family was less in each section than that contributed by the females. This explains a previous table which showed that females 16 years of age and over furnished a larger percentage of the family income than did males in the same age group.

FAMILIES WITH NONCONTRIBUTING FATHERS.

In 93 families in New England and in 199 in the South the father, though living, made no contribution to the family income. The following table shows the number of families affected, by each of the leading causes for the father's failure to aid:

REASON FOR FAILURE OF FATHER TO CONTRIBUTE TO FAMILY SUPPORT

Reason for father's failure to contribute.	New England group.	Southern group.
Incapacitation	38	68
Desertion	18	59
Idleness	34	37
Other causes	13	35

These causes need little comment, except in the case of the idle fathers, i. e., those who are physically able to work but do not. So much has been said of these in connection with the southern cotton mills that a special effort was made to learn something about them. The proportions in which they were found in the two sections are almost identical, they being present in 2.8 per cent of the families studied in New England and in 2.4 per cent of those studied in the South. The condition of their families in the two sections differs materially, however, as shown in the following table:

NUMBER OF WAGE EARNERS AND AVERAGE YEARLY INCOME IN FAMILIES HAVING FATHERS IDLE THOUGH ABLE TO WORK.

	Number of families.	Average number of members.		Average number of wage earners.		Average yearly income.			
		16 and over.	Under 16.	16 and over.	Under 16.	From members 16 and over.	From members under 16.	From other sources.	Total.
New England group	24	5.4	3.0	3.5	0.8	$1,093	$144	$33	$1,270
Southern group	37	4.2	3.6	2.1	1.9	399	282	60	741

There is a noticeable difference between the average incomes of the two groups of families and a much greater difference in the relative importance of the contributions made by wage earners under 16. In the New England group the average yearly income of these families exceeds by $136 the average family income for the 854 families studied, while in the southern families the income falls below the average for the total 1,567 families by $81. In New England the contributions of children under 16 formed 11.3 per cent of the total income, while in the South they formed 38.1 per cent. Evidently in the northern families the possible earnings of the fathers could be spared with much less detriment to the family than in the South.

Back of these differences lies a more fundamental one. In the New England families the father's retirement is usually premeditated, regarded by himself, his family, and his neighbors as a normal and proper proceeding, while in the South it is often almost forced upon

him by the conditions of a mill town. In New England the "idle fathers" were for the most part foreigners, whose families were in fairly comfortable circumstances and who were in many cases "encouraged by their children to lay off from work on the ground that as the father had labored for the support of the family while the children were young, it was their obvious duty to support him when they grew to maturity." In the South the situation is quite different.

Many of these idle men in the South came to the cotton-mill communities with no intention of living upon the earnings of their children to any greater extent than on the farm. The man who has worked upwards of 20 years on the farm soon discovers, however, that he is not adapted to cotton-mill work. His fingers are too clumsy for the tasks requiring dexterity, and the number of common laborers required is limited.[1]

If he gets work in the mill, it is poorly paid and very confining; if he does not find it in the mill, there is little for him to do elsewhere in such a community, and he soon falls into the class of confirmed idlers.

FAMILY CONDITIONS OF MARRIED WOMEN AT WORK.

In 415 of the families investigated married women were found working for wages. These were classed as follows:

CONDITION AS TO HUSBAND OF MARRIED WOMEN AT WORK.

Condition as to husband.	New England group.	Southern group.
Widows	34	66
Deserted and divorced wives	10	33
Wives of incapacitated husbands	4	7
Wives of idle husbands	3	3
Wives with husbands at work	112	143
Total	163	252

The average weekly per capita incomes of these families, excluding the earnings of the wife, were as follows:

WEEKLY PER CAPITA INCOME OF FAMILIES OF MARRIED WOMEN AT WORK, CLASSIFIED ACCORDING TO CONDITION AS TO HUSBAND.

Condition as to husband.	New England group.	Southern group.
Widows	$2.49	$1.78
Deserted and divorced wives	2.06	1.42
Wives of incapacitated husbands	2.18	1.65
Wives of idle husbands	2.92	1.18
Wives of husbands at work	2.73	2.08
Total	2.65	1.90

[1] Vol. I, Cotton Textile Industry, p. 453.

No study of the cost of living of these families was made, but it is obvious that the earnings of the women were much more needed in the South than in the North. A study of the individual schedules shows an even greater difference in this respect than is indicated by the average per capita incomes. In only 49 of the northern families did the per capita weekly income, exclusive of the woman's earnings, fall below $2, and in only 25 below $1.50, while in the southern families the corresponding numbers were 140 and 94.

This difference is especially noticeable among the families in which both wives and husbands were at work. Excluding the earnings of the wives, the weekly per capita earnings of these families fell below $2 in 30 cases (26.8 per cent) of the New England group and in 68 cases (47.6 per cent) in the southern group. In the New England families in a number of cases the income was such that the wife's earnings did not seem to be really necessary.[1] It is worth noticing that only eight of these New England cases in which husband and wife were both working were American families.

It is not possible to say to what extent the work of these married women involved neglect of children, as there may have been others at home who could take care of the little ones. There were among the 163 New England working mothers, however, 75 and among the southern mothers 160 with children under 10 years old, and in the two sections, respectively, 23 and 56 with children under 3 years old.

The widowed mother with young children to support does not appear as frequently as might be expected among these women. Eighteen in the northern group (11 per cent) and 57 in the southern group (22.6 per cent) were widows with children under 14.

SINGLE WOMEN 16 YEARS OF AGE AND OVER AT WORK.

Detailed information was secured concerning 1,017 single women 16 years of age and over at work in New England and 1,288 in the South. These women were not casual or intermittent employees, but regular workers. In both sections the largest proportion was found at the age of 16—in New England 16.1 per cent; in the South 23.1 per cent. In the North 13.2 per cent and in the South 8.6 per cent were 25 years of age and over.

The average earnings of these single women by age groups were as follows:

[1] In 43 of these families (28.4 per cent) the weekly per capita income, excluding the wife's earnings, was over $3, running up to $5 and $6 in some cases. In the southern families of the same class the weekly per capita income, excluding the wife's earnings, reached $3 in only 26 cases (18.2 per cent).

EARNINGS DURING YEAR OF SINGLE WOMEN 16 YEARS OF AGE AND OVER AT WORK, BY AGE.

Age.	New England group.		Southern group.	
	Number.	Average earnings during year.	Number.	Average earnings during year.
16 years of age	164	$272	298	$227
17 years of age	151	302	217	231
18 years of age	158	304	212	234
19 years of age	116	350	140	248
20 years of age	98	321	98	246
21 years of age	64	347	82	243
22 years of age	58	354	56	244
23 years of age	36	345	32	260
24 years of age	38	369	43	243
25 to 29 years	73	374	68	248
30 years and over	61	340	42	265
Total	1,017	322	1,288	238

It is noticeable that the earnings of the girls of 16 in the two sections show less difference than those of any of the older groups; in other words, the earnings of the northern women, beginning at a higher figure than those of the southern women, increase more rapidly. In both sections there is a steady increase of earnings up to the age of 20, at which age there is a sudden decrease, slight in the South, but marked in New England. At 21 in the North and at 22 in the South the increase begins again. The oldest group is the group of highest earnings in the southern mills, while in the New England mills those aged 25 to 29 years show the largest earnings.

CHILDREN AT WORK.

In the 2,421 cotton-mill families visited there were 7,589 children under 16. Of these, 503 in New England and 1,126 in the South were under 6 and consequently were, with very few exceptions, at home, being too young for either school or work. The following table shows the number and proportion of the children aged 6 to 15 who were at work, at school, and at home.

NUMBER AND PER CENT OF CHILDREN 6 TO 15 YEARS OF AGE IN COTTON-MILL FAMILIES VISITED WHO WERE AT WORK, AT SCHOOL, AND AT HOME, BY AGE GROUPS.

Age group.	New England group.							Southern group.						
	Total number.	At work.		At school.		At home.		Total number.	At work.		At school.		At home.	
		Number.	Per cent.	Number.	Per cent.	Number.	Per cent.		Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
6 to 9 years	845	2	0.3	732	86.6	111	13.1	1,181	97	8.2	518	43.9	566	47.9
10 and 11 years								754	379	50.3	266	35.3	109	14.4
Total, 6 to 11 years	845	2	.3	732	86.6	111	13.1	1,935	476	24.6	784	40.5	675	34.9
12 and 13 years	400	48	12.0	336	84.0	16	4.0	1,084	952	87.8	90	8.3	42	3.9
Total, 6 to 13 years	1,245	50	4.0	1,068	85.8	127	10.2	3,019	1,428	47.3	874	29.0	717	23.7
14 and 15 years	624	523	83.8	82	13.1	19	3.1	1,072	1,031	96.2	20	1.9	21	1.9
Total, 6 to 15 years	1,869	573	30.7	1,150	61.5	146	7.8	4,091	2,459	60.1	894	21.9	738	18.0

The difference in the proportion of children under 12 at school in the two sections—86.6 per cent in New England, 40.5 per cent in the South—is probably more a matter of the availability of schools than of the tendency to put children to work earlier, for in the southern age group 6 to 9, in which relatively few are at work, the proportion at school is but little larger than among those aged 10 and 11 years, among whom the proportion at work is large. This table does not show the relative extent of illegal employment in the two sections, since it makes no account of the exceptions under which children under 12 might be legally employed in the South. It does, however, give some idea of the extent to which custom and law give the northern child the advantage in the matter of beginning work. Of the children under 14 studied in the North only 4 per cent were at work, against 47.3 per cent of those in the same age group in the South.

CHILDREN UNDER 14 YEARS OF AGE AT WORK.

The condition as to parents of the children at work under 14 in the two sections is shown by the following table:

CONDITION AS TO PARENTS OF CHILDREN UNDER 14 YEARS OF AGE AT WORK.

Condition as to parents.	New England group.		Southern group.	
	Number.	Per cent.	Number.	Per cent.
Orphans			2	0.1
Children of widows	4	8.0	201	14.1
Children of deserted mother	3	6.0	93	6.5
Children of incapacitated fathers	1	2.0	54	3.8
Children of idle fathers	2	4.0	37	2.6
Children with both parents at work	5	10.0	82	5.7
Children with fathers but not mothers working	35	70.0	959	67.2
Total	50	100.0	1,428	100.0

The numbers in the two sections are too different to permit of comparison, but it is noticeable that in both groups children with father, but not mother, at work, i. e., in what may be considered the normal family condition, very far outnumber all the other classes combined.

In the New England group the average membership of the families from which these children came was 7.6, the average annual income was $1,079, and the average per capita weekly income, excluding the earnings of the children under 14, was $2.36. Information as to literacy was received from 49 of these children; 6, all of foreign families and 4 of them foreign born, could not read or write. In the southern group the average family membership was 7.2, the average annual income $954, and the average weekly per capita income, excluding earnings of children under 14, was $2.06. Information as

to literacy was gained for 1,316 of the children at work under 14, of whom 690, or 52.4 per cent, were unable to read and write.

CHILDREN 14 AND 15 YEARS OF AGE AT WORK.

In the New England families visited there were 523 and in the southern families 1,031 children 14 and 15 years of age at work whose condition as to parents is shown in the following table:

CONDITION AS TO PARENTS OF CHILDREN 14 AND 15 YEARS OF AGE AT WORK.

Condition as to parents.	New England group.		Southern group.	
	Number.	Per cent.	Number.	Per cent.
Orphans	1	0.2	3	0.3
Children of widows	43	8.2	150	14.6
Children of deserted mothers	16	3.1	52	5.0
Children of incapacitated fathers	15	2.9	45	4.4
Children of idle fathers	17	3.2	25	2.4
Children with both parents at work	44	8.4	53	5.1
Children with father but not mother at work	387	74.0	703	68.2
Total	523	100.0	1,031	100.0

Among these children, as among those at work under 14, by far the largest proportion had both parents living, with the father at work and the mother keeping the home. In the New England group the average family membership was 7.5, the average annual income was $1,208, of which $226 represented the earnings of children under 16, and the average per capita weekly income, excluding the earnings of children under 16, was $2.53. Among the southern families the membership was slightly smaller, 7.0; the average annual income was $975, of which $330 came from the children under 16, and the average per capita weekly income, exclusive of the children's earnings, was $1.76.

It will be observed that the average family income from children under 16 at work was much greater in the South than in New England. This is partly due to the fact that a southern family is likely to have more children under 16 at work than a New England family, which in turn is partly due to the lower age at which a child may legally work in the South.

In the South over 60 per cent of the families visited had children under 14 at work as well as children of 15 and 16, while in New England only rarely was a family found with a child under 14 at work. So far as the average yearly earnings of these children in New England and the South are concerned, there is very little difference. Thus in New England the children of 12 and 13 averaged $153 yearly, while those in the South averaged $160. Of the children 14 and 15 years of age those in New England averaged $218, while those in the South averaged $208.

Reports as to literacy were secured from 520 of the New England children at work at 14 and 15, of whom 37, or 7.1 per cent, were unable to read and write, and from 957 of the children at work at the same ages in the South, of whom 340, or 35.5 per cent, were unable to read and write.

SUMMARY AS TO FAMILY CONDITIONS AND FAMILY INCOME.

The income of the cotton-mill family is a composite made up of the earnings of all the family of legal working age, except, in the majority of cases, the mother. In the families visited the father's contribution, in families where there was a working father, did not either in New England or in the South average two-fifths of the family income. Wage-earning male children 16 years of age and over were less numerous than female children of the same description. Their earnings were higher than those of the female children, but their contributions to the family income were both absolutely and relatively lower. In both sections the female children 16 years and over were the most important contributors to the family income, their contributions averaging in New England 42.6 per cent and in the South 35.2 per cent of the total incomes of families having such wage earners. Children under 16 were at work far more numerously and were relatively far more important contributors to the family income in the South than in New England.

The employment of married women in the mills was relatively more common in the New England than in the southern families visited, 20.5 per cent of the mothers living with their families in New England and 16.6 per cent in the South being at work. Of the New England mothers at work 14.1 per cent and of the southern 22.2 per cent had children under 3 years of age.

THE MILL COMMUNITY.

The closing section of the volume on the cotton textile industry is devoted to a general discussion of conditions prevailing in the mill communities visited. When mills were situated in large cities or their immediate outskirts, the workers might be merged with the general population and a mill community could hardly be said to exist. More often, particularly in the South, the mills and their workers made up practically the whole community, which even if near a less specialized settlement was yet absolutely apart from it. More often than not these mill villages were controlled by the mill companies. Two forms of this control were found. Under one form the mill company owned all the land, the houses, etc., prescribed and enforced all regulations, and did pretty much all that was done for the social, moral, and intellectual development of the people. This

condition of affairs was found chiefly in the South. Under the other form the officers in the town or village were elected by the people, but all the offices of importance were held by men who were directly or indirectly connected with the mill company. The minor offices also were practically controlled by them, being held by men in their employ; and when this was the case the mill usually made itself felt just as much as if it owned the whole town. Such a condition of affairs was found principally, but not exclusively, in New England.

It was the exception for families to own their homes, only 126 of the 554 New England families and 76 of the 1,567 southern families visited being owners. Of the families who did not own homes in New England 28 per cent and in the South 91.5 per cent lived in company houses. There seemed a growing sentiment among the more highly skilled and self-respecting operatives against living in company houses.

The sanitary conditions of the mill communities can not fairly be compared, since the mill community of New England is always a part of the village, town, or city in which it is situated, and is subject to the same sanitary regulations as the rest of the community. The mill village of the South is usually unincorporated, and the establishment and enforcement of sanitary regulations depends entirely upon the mill company. Hence, conditions varied from excellent to unspeakably bad.

The consensus of the different reports indicates clearly that the mill companies take more and greater sanitary precautions than usually are taken in the average village or on the average farm.[1]

MEANS OF EDUCATION AVAILABLE FOR COTTON-MILL CHILDREN.

The school education of cotton-mill children, North and South, is mainly that of either the public or the parochial school. In actual educational conditions the New England States visited were far in the lead, but during the last few years the Southern States had shown the greater rate of progress.

The public attitude toward school attendance, as expressed in the laws, differed widely in the two sections.

Compulsory-attendance laws, with specified terms of attendance, fines for violation, and complementary labor laws obtain in Maine, New Hampshire, Massachusetts, and Rhode Island. Of the six Southern States visited none has a State law directly compelling attendance at school, although Virginia and North Carolina have laws making the attendance of children at school compulsory if the local district so orders, and South Carolina, Georgia, and Alabama forbid the employment of certain children unless they shall have had a specified attendance at school.[2]

[1] Vol. I, Cotton Textile Industry, p. 538. [2] Idem, p. 552.

In New England the cotton-mill children had as available means of education the public schools, both day and evening, and the parochial schools, which also frequently had night as well as day sessions. The parochial schools were very extensively used, especially by the foreign children. In the South the cotton-mill children were found in three kinds of schools:

1. Schools in cities. Such schools differ from those found elsewhere only in that the lack of compulsory-attendance laws leads to lower enrollment and less regular attendance. No special exemptions were made for the mill children.

2. Schools in the larger towns which had other industries besides cotton mills. In these schools, among both pupils and some of the teachers, some prejudice is manifested against the cotton-mill children.

3. Cotton-mill schools, built, equipped, and almost entirely supported and controlled by the cotton-mill corporations in towns entirely made up of cotton-mill people. All receive State aid, but this has to be supplemented by direct contributions from the mill corporations. When the school is connected with a large and liberal corporation it may be equal in equipment, building, and teachers to a good city school; if the corporation is a small one or indifferent to the needs of the children, it may be a very poor affair.

Concerning percentage of attendance and regularity of attendance, the investigation shows that the two kinds of cotton-mill schools were about on a par. In both the number of children attending school, as compared either with the number of children of school age in the mill village or town, or even with the number who had enrolled themselves at some time during the school year, was not large. Average attendance falls very low in the cotton-mill school from a number of causes. * * * These are the unattractiveness of the school, the inefficient teaching, the lack of mechanical aids to instruction, the physical discomfort of the school, and the irksomeness of school work. The child feels that it is useless to go to school when he knows that he will go into the mill anyway before he knows much. The family think they need the child's earnings and are indifferent to his education.[1]

In addition to these causes, it is not uncommon for the mill foremen to send to the school for children if more are needed at any time in the mill, a practice which naturally interferes seriously with regular attendance.

SOCIAL STATUS OF COTTON-MILL OPERATIVES.

Whether the mills are located in country or city the mill population forms a separate community. Millworkers have very few social relations with other people; they have an almost entirely separate

[1] Vol. I, Cotton Textile Industry, pp. 577, 578.

social and industrial life. They come of the same stock, they have had practically the same experience before coming to the mill, they have the same deficiencies and shortcomings in common, and they naturally turn to one another for congenial association.

This tendency is much increased by a very general sense of superiority on the part of those who are not millworkers. This feeling, which was found in almost every community visited, was perfectly evident to the millworkers, who naturally resented it and kept more closely to their own class on account of it.

In the mill villages where there is no industry except cotton manufacturing there are, of course, no class distinctions; barring the mill officials all are of the same class and on the same level.

The New England mills visited were generally either in large towns or near them, so that the isolated mill community was decidedly rare. Cotton-mill operatives do not form such an isolated class as in the South. The native American and the English-speaking workers especially merge in the general community.

> Many of the Americans, English, Irish, and Scotch who work in the mills own their own homes. * * * They speak a common language and all have at least the rudiments of an education. Many children of these families enter employment in other industries and girls or boys are sent through the high schools and colleges. * * * They have most of their friends outside of the mill operatives, because most of the operatives are of alien races, people of different customs, standards, and modes of living, and speak different langauges.[1]

To some extent the foreign mill workers in the New England mills have the same isolated position as the native workers in the southern mills. They are not, however, so entirely confined to one industry and their isolation is largely the result of racial feeling and the lack of common language and antecedents with the rest of the community.

MORAL CONDITION OF COTTON-MILL OPERATIVES.

Occasionally during this investigation particular mills were found in which, through lax discipline and indifference on the part of the management, a low moral tone prevailed, but on the whole nothing was found to indicate that employment in cotton mills had any different moral effect upon the women and children from employment in any other line of factory work.

In nearly all of the smaller mill villages, in all the States alike, the operatives as a body are sober and well behaved. There is usually good order and but little drinking, and there is seldom need for a civil officer to make an arrest. In the country mills, especially, this is true. In practically all the country mill villages the moral standard is high.[2]

[1] Vol. I, Cotton Textile Industry, p. 588. [2] Idem, p. 589.

WELFARE WORK.

The greater part of the welfare work at the present time in the cotton industry is found in the Southern States. In considering the value of this work it must be remembered that where civic life is highly developed and the city or State provides such institutions as libraries, public baths, playgrounds, dance or amusement halls, and makes wise building regulations, thus insuring proper housing facilities for the working population, the employer's welfare work may become superfluous. Such was very largely the situation in the northern mill communities visited. "To-day employers' welfare work in New England consists mainly in providing a free bed in a hospital or contributing toward the support of a district nurse."

In the South the need for such work is much greater. Small mills with little capital obviously can not engage extensively in welfare work. More welfare work is found in South Carolina, where mills are larger, than in any other State, yet in every State such work was found, sometimes on an extensive scale. The kinds of work done are too various for summarized description. Some mills provide parks, some clubhouses and social centers. Eight maintained paid welfare workers, 10 had trained nurses, 78 supported or partly supported day schools, 33 night schools, and 17 kindergartens. Not one of the Southern States visited was without some mills which were carrying on welfare work.

COMPANY STORES.

Fifty-seven of the southern mills visited had such stores; in New England they were much less common and none were found outside of Maine and Rhode Island. No direct compulsion seemed to be put upon the operatives to make them trade at the company store, but indirectly a compulsion exists when pay days are far apart.

Almost invariably wages are held back for one pay-roll period, and in many cases it is two weeks between pay days. Thus, for work done from January 2 to January 15, inclusive, payment may not be made until January 29. When newcomers arrive at a mill it may be four weeks before they receive any money; then they will receive two weeks' wages, but they may have a store account covering four weeks. Many of them arrive at the mill village with no household goods of any kind, with no provisions, and with insufficient clothing for themselves and their families. They must go into debt for necessary supplies, and before they draw their first pay their debt may be much more than the pay drawn will cover.

As a rule, where there are company stores, the amount of the store accounts is deducted on each pay day from the earnings of the em-

ployees. Newcomers are allowed some time in which to pay for furniture, etc., and occasionally old employees of known honesty may be favored, but with such exceptions the company store is absolutely protected against loss.

The company stores did not in general have a higher scale of prices than independent stores in the same localities. They depended for their profits on the advantage in buying which their large capital gave them and on their freedom from loss through bad debts.

SUMMARY.

The cotton textile industry employs women and children more numerously than any other industry in the United States, although the relative importance of both these classes has decreased as heavy and complicated machinery has been introduced and speed of operation has become greater. However, men still form less than half of the working force.

The work done by women and children does not necessarily involve harmful conditions, but as actually carried on such conditions are usually present. A large part of their work requires little of either skill or strength, so that young children can be employed to advantage. The employment of such children is not, however, necessary, as adults can perform all the work usually assigned to children.

The laws relating to the employment of children were found to be frequently broken in both sections of the country. In the North the violation usually consisted of a failure to provide or keep on file the "working papers" required by law; in the South the employment of children below the legal age was common.

The work done by children and most of that done by women is of a monotonous and deadening character, requiring no initiative and giving no general training. At the same time much of it demands close attention, and is, therefore, exhausting. The scale of earnings is low, and usually the combined wages of the family are required to meet the family expenses. Relatively the earnings of children under 16 form a more important part of the family income in the South than in New England, while in regard to the earnings of women and girls over 16 the situation is reversed.

CHAPTER II.—MEN'S READY-MADE CLOTHING.

The manufacture of men's ready-made clothing was selected for investigation as being second only to the cotton textile industry in the number of women it employs. It is, moreover, the largest field for home work connected with the sewing trades, and has most commonly been associated with the various evils of what is known as "sweating." In the employment of children it ranks ninth among the manufacturing industries of the country.

The present report is based upon an investigation carried on in New York, Chicago, Baltimore, Philadelphia, and Rochester. In these cities 244 factories were investigated with a total labor force of 23,683 wage earners. The number of establishments visited in each city and the number and age and sex distribution of their employees are shown in the following table:

ESTABLISHMENTS VISITED, AND EMPLOYEES BY AGE AND SEX DISTRIBUTION.

City.	Number of establishments visited.	Employees 16 years of age and over.		Employees under 16 years.		Total, both sexes.
		Male.	Female.	Male.	Female.	
Chicago	70	2,495	3,925	57	317	6,794
Rochester	25	879	1,467	13	32	2,391
New York	88	4,673	3,273	23	39	8,008
Philadelphia	39	1,204	1,120	28	88	2,440
Baltimore	22	1,825	1,974	49	202	4,050
Total	244	11,076	11,759	170	678	23,683

The 23,683 employees studied formed 29.7 per cent of the total employees of the industry in these five cities, the proportion ranging from 19.7 per cent of the total in New York City to 47.3 per cent in Baltimore. Considering females 16 years of age and over and children under 16, the representation is larger; 36 per cent of the total women and 47.3 per cent of the children engaged in the manufacture of men's clothing in these cities were employed in the establishments visited.

The investigation was confined to shops in which garments are made up. Cutting-room employees and others not engaged in the actual work of making up garments were ignored. With few exceptions, only establishments were considered in which men's or boys' outer or street clothing was made; shops making overalls and the like, for instance, were excluded.

CONCENTRATION OF THE INDUSTRY.

The manufacture of men's ready-made clothing is the most important branch of the general clothing industry. It is characterized by an extreme concentration, being confined almost exclusively to cities, and to a relatively small number of cities at that. The five cities visited in this investigation produced 68.3 per cent of the total product. New York alone produces over one-third (38.5 per cent) of the entire output of men's clothing and one-half of the total product is manufactured in the three seaboard cities—New York, Philadelphia, and Baltimore.

The urban localization of the industry is due to its dependence, first, on a large labor supply and, second, on facilities for marketing the product. The character of our immigration, the large number of tailors among the immigrants, and the preference of the Jews for the sewing trades all account for the growth of the clothing industry in the larger cities, where, also, of course, the best facilities for marketing the product are found.

New York is the leading center of the clothing industry in the country, owing partly to its large supply of immigrants fitted for the clothing trades, partly to its nearness to the sources of raw material, and partly to its advantages as a market. Chicago stands second, and Baltimore, Philadelphia, and Rochester follow in order.

THE LABOR FORCE.

PROPORTION OF MEN, WOMEN, AND CHILDREN.

The table already given (p. 83) shows the number of employees studied in each city. The following table shows the proportion each class of workers formed of the total:

PER CENT WHICH MEN, WOMEN, AND CHILDREN FORMED OF TOTAL WORKERS STUDIED, BY CITIES.

City.	16 years of age and over.		Under 16 years.	
	Males.	Females.	Males.	Females.
Chicago	36.7	57.8	0.8	4.7
Rochester	36.8	61.3	.6	1.3
New York	58.3	40.9	.3	.5
Philadelphia	49.3	45.9	1.2	3.6
Baltimore	45.1	48.7	1.2	5.0
Total	46.8	49.6	.7	2.9

The relative number of women employed differed considerably from one city to another, owing partly to racial customs and partly to the abundance or scarcity of other openings for women workers. Thus in Chicago, Bohemians and Poles are the leading races in the industry, and among these the men are apt to seek work demanding

greater physical strength, leaving the sewing trades to women. Among the Jews the opposite situation prevails; men are apt to take possession of the sewing trades and the proportion of women employed is relatively small. In Rochester the large proportion of women seems due mainly to the scarcity of other industrial openings for them.

Children are nowhere an important part of the labor force, but everywhere the per cent of girls is far larger than that of boys. This is due to the very nature of the industry.

Part of the work done by men is unsuited to children, because it requires considerable physical strength. This applies to pressing, which requires constant standing and the handling of heavy irons. Like pressing, basting requires standing. Basting requires, moreover, skill and experience, and for this purpose adult immigrant male labor with European training in the work is easily available. Machine sewing is often left to women and requires some preliminary training. This restricts the field for the labor of boys. Girls, on the other hand, are often prepared to do handwork, coming from their homes to the shop with a knowledge of plain sewing and also of machine sewing.[1]

AGE DISTRIBUTION OF EMPLOYEES.

The age of the female employees and of children under 16 was obtained with much care, but for males 16 years and over no effort was made to secure this information unless they were engaged in occupations in which women or children were also employed; consequently only 5,642 males 16 years of age and over are included in the following table, although the whole number employed was 11,076. The age distribution of employees for whom details were secured was as follows:

AGE DISTRIBUTION OF EMPLOYEES, BY SEX.

Age group.	Males.		Females.		Total.	
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
12 years	4	0.1	7	0.1	11	(2)
13 years	7	.1	57	.5	64	0.4
14 years	76	1.3	240	2.0	316	1.8
15 years	83	1.4	374	3.2	457	2.6
16 years	163	2.8	919	7.9	1,082	6.2
17 years	226	3.9	1,236	10.6	1,462	8.4
18 years	292	5.0	1,236	10.6	1,528	8.7
19 years	247	4.3	1,041	8.9	1,288	7.4
20 years	282	4.8	970	8.3	1,252	7.2
21 years	246	4.2	647	5.5	893	5.1
22 years	243	4.2	574	4.9	817	4.7
23 years	231	4.0	439	3.7	670	3.8
24 years	244	4.2	324	2.8	568	3.2
25 to 29 years	849	14.6	1,019	8.7	1,868	10.7
30 to 34 years	591	10.2	580	5.0	1,171	6.7
35 to 44 years	818	14.1	764	6.5	1,582	9.0
45 to 54 years	247	4.3	336	2.9	583	3.3
55 to 64 years	65	1.1	112	.9	177	1.0
65 years and over	20	.3	31	.3	51	.3
Others reported as 21 years and over	878	15.1	779	6.7	1,657	9.5
Total	5,812	100.0	11,685	100.0	17,497	100.0

[1] Vol. II. Men's Ready-Made Clothing, p. 37.

[2] Less than one-tenth of 1 per cent.

The greatest massing of female workers occurs at 17 and 18, the numbers at these ages being exactly the same, and one-fifth (21.2 per cent) of the total female force being comprised in these two groups. Over a third (38 per cent) are found in the four years 16 to 19. The age level is rather low, very nearly seven-tenths (69 per cent) being under 25, and only 22.3 per cent being 30 and over. This is especially noticeable as compared with the male workers studied, of whom only 40.3 per cent were under 25, while 45.1 per cent were 30 and over. These were men employed in the same occupations as women, so it is evident that the women were in general working with men much older than themselves. "To the extent that they are in competitive occupations women must be handicapped by their limited experience in industry."

RACE OF EMPLOYEES.

Only 7.3 per cent of the women 16 years of age and over and 12 per cent of the children under 16 were Americans by birth and descent. The race distribution of the whole group for whom the exact ages were obtained was as follows:

RACE DISTRIBUTION OF EMPLOYEES, BY SEX.

Race.	Under 16 years.			16 years of age and over.		
	Male.	Female.	Total.	Male.	Female.	Total.
American	13	85	98	40	802	842
Bohemian	27	118	145	123	990	1,113
German	15	100	115	210	1,653	1,863
Hebrew	56	68	124	2,964	1,832	4,796
Italian	24	135	159	1,526	3,310	4,836
Lithuanian	.....	13	13	239	263	502
Polish	17	111	128	267	978	1,245
Scandinavian	.....	5	5	23	396	419
Other races	3	22	25	180	715	895
Total	155	657	812	5,572	10,939	16,511

Considering only those 16 years of age and over, the predominance of the Hebrew and Italian races is very marked, their numbers being nearly equal, and the two together forming well over half (58.3 per cent) of the whole group. The sex distribution of these two races is markedly different, the males forming 61.8 per cent of the Hebrews but only 31.6 per cent of the Italians. The Hebrews are the only largely represented race showing more men than women in these occupations. Usually the women lead, and sometimes their excess is very marked. Among the Germans the women are 88.7 per cent of the whole group, among the Bohemians 88.9 per cent, and among the Americans 95.2 per cent. Among those under 16 the boys nowhere equal the girls in number, but the disproportion is least among the Hebrews.

CONJUGAL CONDITION OF FEMALE EMPLOYEES.

The conjugal condition of the female workers differed considerably according to race, the variations being shown in the following table. As only two girls under 16, one an Italian and one a Hebrew, were found to be married, the table deals only with those who had reached or passed 16.

CONJUGAL CONDITION OF FEMALE EMPLOYEES 16 YEARS OF AGE AND OVER, BY RACE.

Race.	Number.			Per cent.		
	Single.	Married.	Widowed, divorced, separated, etc.	Single.	Married.	Widowed, divorced, separated, etc.
American	694	78	80	81.5	9.2	9.4
Bohemian	910	68	41	89.3	6.7	4.0
German	1,383	242	170	77.2	13.4	9.4
Hebrew	1,760	71	66	92.8	3.7	3.5
Italian	2,000	1,381	196	55.9	38.6	5.5
Lithuanian	220	43	6	81.8	16.0	2.2
Polish	864	157	34	81.1	15.7	3.2
Scandinavian	333	67	52	73.7	14.8	11.5
Other races	537	142	80	70.8	18.7	10.5
Total	8,711	2,289	725	74.5	19.3	6.2

The Italians show a strikingly large, and the Hebrews a strikingly low, proportion of married women working, while the other races display no very wide variations. From a careful study of the data gathered, the conclusion is reached that about one-third of the married workers were in the shop only temporarily, probably working only for a short time after marriage. The remaining two-thirds were older women who were working more permanently to add to the family income.

A study of the figures relating to the number of single and married women at each age shows that for most women the period of industrial life is very brief.

The industrial effects of this are varied. The labor force, where women are employed, requires constant training owing to the large number who leave the shop every year. They do not look forward to remaining in the shop. The workers do not have the same opportunities for learning the complicated processes and becoming expert at them. This probably accounts for the fact that in the eastern cities where plenty of male laborers are available, males are used for everything except the lowest skilled work. Naturally the women are handicapped in competition with the men for the same kinds of work. It is needless to say that their earnings are affected by their inferior skill and their attitude toward work as a temporary makeshift.[1]

[1] Vol. II, Men's Ready Made Clothing, p 71

EMPLOYMENT OF CHILDREN.

The number and ages of the children under 16 found at work during this investigation were as follows:

NUMBER OF CHILDREN UNDER 16 YEARS OF AGE AT WORK, BY AGE AND SEX.

Age.	Male.		Female.		Total.	
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
12 years	4	36.4	7	63.6	11	100.0
13 years	7	10.9	57	89.1	64	100.0
14 years	76	24.1	240	75.9	316	100.0
15 years	83	18.2	374	81.8	457	100.0
Total	170	20.0	678	80.0	848	100.0

These children constituted only 3.6 per cent of the total workers in the 244 establishments visited. In 105 establishments no children at all were employed, while in the remainder the proportion children formed of total employees varied from less than 1 per cent to between 30 and 40 per cent. In general the smaller shops employed a larger proportion of children than the large establishments.

OCCUPATIONS OF CHILDREN.

The children are classified according to occupation as operators, high and low grade hand sewers, miscellaneous workers, and apprentices. "The latter term does not have any definite meaning, but stands for such children, boys, as were being taught the work of trimming or cutting in a more or less desultory way."

The children were divided among these occupations as follows:

OCCUPATIONS OF CHILDREN UNDER 16 YEARS OF AGE, BY SEX.

Occupation.	Boys.		Girls.	
	Number.	Per cent.	Number.	Per cent.
Apprentices	6	3.5	.....	.....
Operators	36	21.2	121	17.8
High-grade hand sewers	1	.6	30	4.4
Low-grade hand sewers	18	10.6	244	36.0
Miscellaneous (nonsewing)	109	64.1	283	41.8
Total	170	100.0	678	100.0

The miscellaneous group includes such workers as sorters, bottom trimmers, errand boys and girls, stitch pullers and markers, check girls, vest turners, strap and belt turners, soapers, basting pullers, and cleaners. Most of this work is better suited for girls than for

boys, and this, combined with the greater availability of girls for sewing occupations, accounts for their marked predominance among the employees under 16. Each of the classifications here shown includes a number of occupations. Thus in Chicago the children classed as operators were performing 27 different kinds of work, nearly all confined to either the very simple or the semiautomatic machine work.

CHARACTER OF CHILDREN'S WORK.

The work of a garment-making shop is subdivided to an extreme degree, and the children were employed in too many different occupations to permit a description of the work done. In general the occupations in which they were engaged can not be regarded as in themselves greatly injurious to health; the worst features involved were those of constant sitting and bending over their work and the confinement in close workrooms. In some instances, particularly in the small contract shops, errand boys were required to work long hours, it being necessary for them to return work which had to be done on a certain date and on which the shop might be at work until 10 o'clock at night. A number of instances of this overtime work were found.

Only a small proportion of children were found in occupations which might be regarded as permanent, i. e., in which they might remain as they grew up. Children do not seem to have any well-established position in the industry, and practically all employers stated that they could get along just as well without them. Women could do much of the work performed by children, and the rest could be distributed by means of a rearrangement in the subdivision of labor without causing any important difference.

ILLEGAL EMPLOYMENT OF CHILDREN.

Attention was directed mainly to violations of four classes of laws, namely, those setting an age limit for employment of children, those forbidding employment without proper certificates, those limiting the number of hours per day or per week which a child might work, and those requiring employers to keep certificates on file.

Information in regard to violations of child-labor laws in the 140 establishments employing children was secured in more or less detail concerning 664 children, the following table showing the general extent to which the laws were violated:

NUMBER AND PER CENT OF ESTABLISHMENTS EMPLOYING CHILDREN IN VIOLATION OF SOME PROVISION OF THE LAW, AND NUMBER AND PER CENT OF CHILDREN ILLEGALLY EMPLOYED IN SUCH ESTABLISHMENTS.

City.	Establishments employing children under 16 years and reported upon.			Children under 16 years employed and reported upon.		
	Total.	Violating some provision of the law.		Total.	Illegally employed.	
		Number.	Per cent.		Number.	Per cent.
Chicago	56	15	26.8	216	32	14.8
Rochester	12	8	66.7	43	22	51.2
New York	29	28	96.6	58	55	94.8
Philadelphia	21	13	61.9	99	44	44.4
Baltimore	[1] 22	16	72.7	248	163	65.7
Total	[1] 140	80	57.1	664	316	47.6

[1] Including 4 pad shops.

The wide differences in the proportion of violations found was due in part to the greater strictness of the laws in some places and in part to the greater completeness of the information secured. The table covers violations of every kind, whether serious or trivial.

EMPLOYMENT OF CHILDREN UNDER LEGAL AGE.

In Baltimore the legal age for beginning work was 12 years; in the other cities visited it was 14. Only 7 children under the legal age, 3 in Chicago and 4 in New York, were found working. As children do not form an important part of the working force under any circumstances, the temptation to employ any under age is not strong, and the indications were that illegal employment of this nature was not common in the cities visited.

EMPLOYMENT OF CHILDREN WITHOUT PROPER CERTIFICATES.

In each of the cities investigated the law provided that children under 16 might not be employed without certificates showing that they had reached a specified age, and had met certain requirements as to schooling. Of the 140 establishments employing children, 83 were investigated upon this point. Violations were found in 21, as follows:

Chicago	4
Rochester	1
New York	10
Philadelphia	3
Baltimore	3

In all, 28 children were found employed without proper certificates.

EMPLOYMENT OF CHILDREN IN EXCESS OF LEGAL HOURS.

In both Illinois and New York children under 16 might not work more than 8 hours a day or 48 hours a week, and in both States might not be employed after a certain hour in the evening or before a certain hour in the morning. In Chicago, of 210 children reported upon, 10 girls and 4 boys were found to be employed illegally long hours. Three worked 51½ hours and the rest 54 hours a week; all were employed more than eight hours for five days in the week. Seven reported working after legal hours in the evening.

In Rochester 2 children in different establishments were found to be working more than eight hours a day. In New York City 28 out of 29 establishments investigated employed children more than eight hours a day, and 53 out of 58 children investigated were thus illegally employed; 39 children worked before the lawful hours for beginning, and 42 after the legal hour for ending, work.

In Philadelphia children might not be employed more than 12 hours a day or 60 hours a week. No violations of this provision were found.

In Baltimore the law forbade employing children more than 10 hours a day. Twenty-seven children in three establishments were found who were regularly working more than 10 hours a day.

FAILURE OF EMPLOYERS TO KEEP CERTIFICATES ON FILE.

In each of the cities investigated the law required that employment certificates for children under 16 should be kept on file in establishments employing such children. This provision was frequently violated. Of 59 establishments investigated in regard to it, 38 failed to keep such certificates on file.

In Illinois the law provided that females under 16 might not be employed in any capacity where such employment would compel them to remain standing constantly. In Chicago 20 establishments were reported upon in regard to this provision; 9 were found to be violating the law, 15 children being affected. None of these children were working more than eight hours a day, but being engaged in occupations in which the work could not be performed so easily or rapidly while sitting, they were all required to stand for the entire eight hours.

SUMMARY OF EMPLOYMENT OF CHILDREN.

The study of the employment of children in this industry leads to three general conclusions:

1. Children are a rather unimportant part of the labor force, and the industry might easily be so adjusted as to dispense with them altogether.

2. The violations of the age law were so few as to indicate that there was no particular advantage in employing children under the legal age. The larger proportion of the violations of this kind occurred in the cases of Italian children, who develop physically at an earlier age than most of the other races considered.

3. There is little in the occupations at which children are employed to give the child a training for the future or to equip it with a trade. On the other hand, their work has no inherently dangerous conditions, and accidents are almost unknown.

HOURS OF LABOR AND OVERTIME.

The record of the time worked was not, unfortunately, available for all workers. Payment by the piece is common, and many shops keep no record of the hours of work for any but their time workers. The statistics of the extent of employment rest, therefore, on the hours reported for time workers and for pieceworkers in such establishments as keep a time record for this class of employees.

The following table shows the establishment hours and the hours actually worked in the different cities:

AVERAGE WEEKLY ESTABLISHMENT HOURS AND AVERAGE HOURS ACTUALLY WORKED IN A REPRESENTATIVE WEEK BY MALE AND FEMALE EMPLOYEES 16 YEARS OF AGE AND OVER AND UNDER 16 YEARS, BY CITIES.

City.	Employees 16 years and over.				Employees under 16 years.					
	Males.		Females.		Males.		Females.		Total.	
	Establishment hours.	Hours worked.	Establishment hours.	Hours worked.	Establishment hours.	Hours worked.	Establishment hours.	Hours worked.	Establishment hours.	Hours worked.
Chicago	54.4	48.4	54.3	48.4	46.0	45.8	45.7	45.3	45.8	45.4
Rochester	54.6	50.5	54.6	49.2	44.4	48.0	44.6	44.3	44.5	45.8
New York	57.2	52.5	57.2	49.9	56.6	53.2	57.1	54.4	56.9	53.9
Philadelphia	54.9	46.3	54.6	47.4	54.9	51.2	54.6	50.6	54.6	50.7
Baltimore	57.9	46.4	57.7	45.8	57.3	52.9	57.1	40.4	57.1	45.6

It will be seen that this table shows a considerable amount of time lost among the adults and relatively little among the children. The statistics indicate idleness, voluntary or compulsory, for from 7.5 per cent to 20 per cent of the week, varying in the different cities. As between the sexes there is not much difference, though on the whole women show a rather larger amount than men of time lost, and the same general relation appears between boys and girls. It is doubtful how far these figures represent the prevailing situation in the clothing trade.

The caution must be urged that these figures can not be taken as indicative of the extent of unemployment in the industry as a whole during the year, as the figures are for a week only. The statistics

apply in the main to the large establishments. Even here many establishments had shut down entire shops, reducing the force, but keeping busy the shops reported. No note was taken of idle shops. Moreover, in securing pay rolls the endeavor was to secure a pay roll for a full week, where it was possible to secure one for a full week not far removed from the time when the establishment was visited.[1]

The average hours worked, while useful for purposes of comparison, show nothing as to how many are working overtime or undertime. To obtain some light on this point a special analysis was made of the Chicago data for the industry as a whole—that is, for both the "ready-made" and the "special-order" branches. There were 2,991 female employees 16 years of age and over in the shops investigated. Of these, 7.5 per cent worked overtime, 50.8 per cent worked full time, and 11.7 per cent worked five days but not quite the full week. Thus 70 per cent worked approximately full time; the remaining 30 per cent were idle for from two to five days. A very similar situation as to males 16 years of age and over was shown, while of the 329 children employed in these establishments three-fourths had been employed approximately a full week, i. e., five days or over. Thus in each group a proportion varying from one-fourth to three-tenths was idle from two to five days during the week studied.

It is clear that there is no even spread of time lost among all shops and employees. While many employees work full time, and even overtime, a large fraction of the force is idle for a considerable part of the week.[2]

ILLEGAL OVERTIME EMPLOYMENT OF WOMEN.

At the time of this investigation New York and Pennsylvania were the only States visited which had laws regulating the hours of work for women. No illegal employment of women was found in Rochester, so the discussion is limited to New York City and Philadelphia.

The New York law forbade the employment of women and girls more than 6 days or 60 hours a week. Females 16 years of age and over might be employed more than 10 hours a day regularly for 5 days a week and irregularly for 3 days a week, provided they did not work more than 12 hours on any one day, or more than 60 hours in any one week.

Violations of this law were difficult to discover, since employers always claimed the women were working only the legal hours, and it was only by close questioning and careful investigation that the truth was found. In 9 establishments 90 women were working illegally long hours on a regular daily and weekly schedule; in 18 establishments women had worked overtime illegally during the year

[1] Vol. II, Men's Ready-Made Clothing, p. 108. [2] Idem, p. 110.

previous to the investigation, and 9 had employed women to work overtime illegally during the week for which a copy of their pay roll was made.

In all, 29 establishments, or 33 per cent of the 88 establishments visited, violated the law regulating the employment of females 16 years of age and over in at least one of its provisions.

The Pennsylvania law provided that no woman should be employed for more than 60 hours in any one week or for more than 12 hours in any one day.

Thirty-five establishments, employing 1,049 females 16 years of age and over, were investigated in Philadelphia. None had a regular daily or weekly schedule of hours which was illegal, but in eight, or nearly 23 per cent of all those visited, women on occasion worked overtime to an extent that violated the law.

The investigation was made at a time when the business depression of 1907–8 was still affecting the industry, so that there was less likelihood of overwork than at a more normal time.

EARNINGS OF EMPLOYEES.

The statistics of wages and earnings were taken from the pay rolls of the establishments investigated. The period covered was one week, the data being taken for the week of normal work nearest the visit. The wage data were secured for all female employees, for all males under 16, and for such males 16 years and over as were employed in occupations at which women or children also worked.

EARNINGS OF EMPLOYEES 16 YEARS OF AGE AND OVER.

The following table shows the classified earnings of the whole group of workers 16 years of age and over for the five cities combined:

NUMBER AND PER CENT OF EMPLOYEES 16 YEARS OF AGE AND OVER EARNING CLASSIFIED WEEKLY AMOUNTS, BY SEX.

Weekly earnings.	Employees 16 years of age and over.				Per cent earning classified amounts or less.	
	Number.		Per cent.			
	Males.	Females.	Males.	Females.	Males.	Females.
Under $2	93	344	1.7	3.4	1.7	3.4
$2 to $2.99	143	603	2.6	5.9	4.3	9.3
$3 to $3.99	226	1,098	4.1	10.8	8.4	20.1
$4 to $4.99	256	1,412	4.6	13.9	13.0	34.0
$5 to $5.99	362	1,517	6.6	15.0	19.6	49.0
$6 to $6.99	411	1,314	7.4	13.0	27.0	62.0
$7 to $7.99	489	1,131	8.9	11.1	35.9	73.1
$8 to $8.99	451	852	8.2	8.4	44.1	81.5
$9 to $9.99	439	655	8.0	6.5	52.1	88.0
$10 to $10.99	479	451	8.7	4.4	60.8	92.4
$11 to $11.99	378	253	6.9	2.5	67.7	94.9
$12 and over	1,776	519	32.3	5.1	100.0	100.0
Total	5,503	10,149	100.0	100.0	.....	.....

A comparison of the earnings of men and women, as shown in this table, brings out two points clearly: First, the range of wages for men is wider than for women. A range of $4 (from $3 up to $7, or from $4 up to $8) will cover more than half the women and over three-fifths (63.8 per cent) are in the groups earning from $3 to $7.99. There is no such massing of the men. The five groups which included over three-fifths of the women included only 31.6 per cent of the men, and at least seven of the $1 groups are required to account for half their number. Second, the level of the women's earnings is much lower than of the men's. Thirty-four per cent of the women, as compared with 13 per cent of the men, earned less than $5 during the week studied; only 26.9 per cent of the women, but 64.1 per cent of the men, earned $8 or over. Almost a third of the men (32.3 per cent) were earning $12 or over, while about one-twentieth of the women were found in this group.

The lower level of women's wages appears more clearly in the following table:

AVERAGE WEEKLY EARNINGS OF MALES AND FEMALES 16 YEARS OF AGE AND OVER, AND UNDER 16 YEARS OF AGE, IN LEADING OCCUPATIONS, BY CITIES.

City.	Number of employees.					Average weekly earnings.				
	16 years and over.		Under 16 years.			16 years and over.		Under 16 years.		
	Males.	Females.	Males.	Females.	Total.	Males.	Females.	Males.	Females.	Total.
Chicago	492	3,569	51	296	347	$10.56	$7.30	$4.21	$3.92	$3.97
Rochester	389	1,329	13	29	42	11.29	7.04	3.99	3.98	3.98
New York	2,470	2,623	20	30	50	10.45	6.00	4.25	3.86	4.02
Philadelphia	625	946	22	80	102	9.53	5.75	3.77	3.56	3.52
Baltimore	965	1,317	36	104	140	7.93	4.74	3.69	3.25	3.37

The average earnings of the women are in every place at least as much as $3 lower than those of the men, and in two cities the difference is over $4. As between boys and girls the difference is much less; the girls averaged a little lower than the boys.

EARNINGS OF HOME WORKERS.

In every city a considerable number of workers were employed outside of the shop. The following table shows the number and proportion of these in certain earnings groups as compared with the shopworkers:

NUMBER AND PER CENT OF FEMALE HOME AND SHOP WORKERS 16 YEARS OF AGE AND OVER EARNING CLASSIFIED AMOUNTS PER WEEK.

Weekly earnings.	Shopworkers.		Home workers.	
	Number.	Per cent.	Number.	Per cent.
Under $2	344	3.4	140	21.8
$2 to $3.99	1,701	16.7	277	43.1
$4 to $5.99	2,929	28.9	154	24.0
$6 to $7.99	2,445	24.1	40	6.2
$8 to $9.99	1,507	14.9	18	2.8
$10 to $11.99	704	6.9	10	1.6
$12 and over	519	5.1	3	.5
Total	10,149	100.0	642	100.0

As compared with the shopworkers the earnings of the home workers are extremely low. In reality they are even lower than shown by the above table, for often the worker whose name appears on the pay roll is helped by one or more members of her family. Even this does not bring the earnings up to anything like a living wage. Nearly nine-tenths (88.9 per cent) earned under $6 and over one-fifth under $2.

The earnings in different occupations are studied in much detail, but the principal conclusion drawn is that there was an entire absence of what could be called a standard wage in the industry.

This is true of both men and women and of both piece and time workers. Examining the weekly rates in the same occupation, the workers in a given employment are found distributed according to their earnings over a wide range in the wage scale. Examining the earnings of pieceworkers, their earnings seem to be similarly differentiated. Wages where paid by the week are fixed in the trade either according to the efficiency or capacity for bargaining of the worker or by an arbitrary determination, and not according to a particular time rate.[1]

As illustrating this lack of standard rates data are cited covering the earnings of 32 female edge basters 21 years of age and over working by the week in coat shops. Their average computed earnings for a full week were $9.17, but their individual earnings ranged from $7 to $12. Sixty-six female coat operators 18 to 20 years of age, working by the piece, averaged $9.93, with an individual range of from $7 to $12. Among time workers 116 women 18 to 20 years of age averaged $8.96, but their individual earnings ranged from $5 to $14.

Examination of the earnings in other occupations brings to light the same general conditions. There are no standard rates or standard earnings in the sense in which they are day rates for unskilled labor or definite rates in highly skilled trades, such as the printing trade.[2]

[1] Vol. II, Men's Ready-Made Clothing, p. 194. [2] Idem, p. 195.

EARNINGS OF EMPLOYEES, BY RACE.

Among women in general the races who had been longer in the industry—the Germans, Scandinavians, and Bohemians—showed the higher earnings. It is not certain whether this is due to racial ability or to other factors. Many of the older races begin as children and gradually acquire the skill and training needed for the more important work in the shop, while many of the recent immigrants come into the shop at a later age and crowd into such work as they can do without any preliminary training, usually some form of plain sewing.

Another consideration is the fact that the direction of the industry is likely to be in the hands of the older races, who naturally are apt to aid their friends and acquaintances in seeking the better positions. As a result there is a tendency for occupations to become identified with races. Everywhere the German girls are mainly operators, while the Italians, who are newcomers, are hand sewers.

The distribution of races in the industry suggests that the older races among the women in the industry—Germans, Scandinavians, and Bohemians—have preserved for themselves the better-paying occupations, leaving the poorly paid hand sewing to the more recent immigrants—Hebrews, Italians, and Lithuanians.[1]

Among the men the Hebrews and the Italians are the only two races sufficiently represented to permit any valid comparisons. Of these the Hebrews, who are the older race in the industry, everywhere earn more.

HOME WORK IN THE CLOTHING INDUSTRY.

The principal steps in the making of men's ready-made clothing are the machine work ("operating," so called), basting, finishing or felling, and pressing. Finishing is the principal home work, and it requires but little skill, only the knowledge of plain sewing that most immigrant women possess. The study of home workers in the clothing industry is largely a study of home finishers.

The term "finishing" is loosely used to denote the hand sewing requisite to complete the garment after the operating and basting has been done, and it consists for the most part of felling the lining to the cloth of the garment, where this has not already been done by machine. Sometimes other incidental operations are added as a part of the finishing, varying with the grade of the clothing and the particular kind of garment.

[1] Vol. II, Men's Ready-Made Clothing, p. 212.

EXTENT OF HOME WORK.

No statistics exist showing the extent of home finishing. It is resorted to more extensively in New York and less proportionately in Chicago than elsewhere. The pay-roll data of the establishments investigated showed that 25.6 per cent of the finishers employed were working at home. At the time of the investigation, however, owing to the industrial depression, many of the small contract shops were closed and hence could not be included in the investigation. But the small contract shop is the one that makes the greatest use of home finishing, so that in all probability the proportion given above is far below that which really exists. The 674 home finishers included in this study were distributed as follows:

Chicago	40
Rochester	34
New York	488
Philadelphia	48
Baltimore	64
Total	674

RACE, AGE, AND CONJUGAL CONDITION OF HOME WORKERS.

Italians formed 84.3 per cent of the total group studied; in Chicago they were 90 per cent and in New York 98.2 per cent of the total. Germans formed 8.3 per cent of the whole group. No other races were numerously represented.

The age and conjugal condition of the workers were as follows:

CONJUGAL CONDITION OF HOME WORKERS, BY AGE.

Age.	Married.	Widowed, divorced, separated, or deserted.	Single.	Total.
Under 16 years	.....	.....	5	5
16 and 17 years	4	.....	4	8
18 to 20 years	42	1	4	47
21 to 24 years	90	.....	5	95
25 to 29 years	110	4	6	120
30 to 34 years	100	12	2	114
35 to 49 years	181	32	7	220
50 years and over	29	35	1	65
Total	556	84	34	674

It is evident that the work is very largely in the hands of the older married women. The opportunities for advancement are so much greater in the shop that young girls will not work at home unless forced to it by exceptional circumstances.

HOURS, EARNINGS, AND HELPERS OF HOME WORKERS.

The hours of the home workers are necessarily irregular, but inquiries were made as to the usual time worked. In New York in spite of the depression during which the investigation was made over 60 per cent regularly worked on garments 8 hours or over per day, and a little over one-fourth worked 10 hours or more. In the other four cities combined 51.5 per cent worked 8 hours or more; one-fifth worked 10 hours or over. This it must be remembered was time spent on garment making exclusive of household duties, care of children, etc.

Full-time weekly earnings were as follows:

NUMBER AND PER CENT OF HOME WORKERS EARNING CLASSIFIED AMOUNTS PER FULL WEEK.

Earnings per full week.	Number.	Per cent.	Earnings per full week.	Number.	Per cent.
Under $1	5	0.7	$5 to $5.49	43	6.4
$1 to $1.49	16	2.4	$5.50 to $5.99	9	1.3
$1.50 to $1.99	60	8.9	$6 to $6.99	24	3.6
$2 to $2.49	119	17.7	$7 to $7.99	6	.9
$2.50 to $2.99	83	12.2	$8 to $8.99	4	.6
$3 to $3.49	141	20.9	$9 to $9.99	2	.3
$3.50 to $3.99	57	8.5	$10 and over	3	.4
$4 to $4.49	75	11.1			
$4.50 to $4.99	27	4.0	Total	674	100.0

The average earnings per full week of the whole group were $3.21. These earnings range much lower than those of the shop workers, and there is not the same chance for advancement that there is in the shop. The work requires so little skill that the average woman can do it practically as well after two weeks' as after two years' experience.

The full-time earnings are frequently cut down by the irregularity of the work. It was the exception for home workers to be steadily employed. To a considerable degree they alternated between rush periods, when they had to work as long and as fast as they possibly could, and slack seasons, when they might get only two or three garments a day or none at all.

The home workers were sometimes helped by other adults of the family who were temporarily out of work, but more often children were pressed into service. In the families visited 110 children ranging from 5 to 15 years of age, were found working as helpers, and there was ground for suspicion that in many cases the fact that children were helping was concealed.

GENERAL CONDITIONS OF HOME WORKERS.

Ordinarily the home finishers appeared to have taken up the work under the pressure of extreme poverty. For the widowed and the deserted, separated, or divorced wives the reason for their poverty

is evident enough; they were unskilled women, usually with family responsibilities and no way of meeting them. In the case of the 556 married women the poverty seems due to the low earning capacity of the husbands. Only 58 (10.9 per cent) of these husbands had earned as much as or more than $500 during the year studied; 56.6 per cent had earned under $300. Only 75 had been employed throughout the year. The partial idleness of the others did not seem to be their choice, but was due to sickness, age, or the seasonal character of the unskilled outdoor labor, which was all most of them were capable of performing.

The average membership of the families for whom full data were gathered was 4.5, and the average yearly income $515. The husband, in families where there was a husband at work, contributed on an average 58.4 per cent of the family income, the wife 22 per cent, children under 14 years 9.2 per cent, children 14 and 15 years 16.4 per cent, and children 16 years and over 54 per cent.[1] Small as were their earnings, the husbands contributed a larger average proportion of the family income than did the husbands in the whole group of garment makers studied, or among the cotton textile workers, the silk workers, or the glassworkers.[2]

In the families of the 590 married home workers for whom data on this point were secured there were approximately a thousand children under 16, their age distribution being as follows:

Under 3 years	285
3 to 5 years	229
6 to 9 years	215
10 to 13 years	192
14 and 15 years	103
Total	1,024

Even assuming that by the time a child is 6 years old it may safely be left to its own devices for an hour, more or less, there are 514 children too young to be safely left alone while the mothers are carrying the work to and from the shops; and these children, moreover, ought to absorb a good part of the mother's care and attention during working hours. In 255 cases the mother looked after the children

[1] These percentages apply in each case only to families in which wage earners of the specified class were found.

[2] The study of four leading industries showed the following facts:

Per cent of net family income contributed by fathers in families having fathers at work—

Cotton-textile industry—	
Northern group	37.7
Southern group	34.0
Glass industry	56.0
Men's ready-made clothing	48.4
Silk industry	50.5

See Report on Condition of Woman and Child Wage Earners in the United States, Vol. I, p. 432; Vol. II, p. 364; Vol. III, p. 524; Vol. IV, p. 258.

unaided as best she could; in other cases they were cared for by older children, by relatives, or neighbors, the amount of care received being an exceedingly variable quantity.

The living conditions of the home workers varied widely. For the most part they were tenement dwellers. Almost all the finishing was done in kitchens and bedrooms, there being only 9 cases out of 426 reported in New York in which other rooms were used. In 304, or half the cases, the rooms in which the work was done were reported to be in good condition as to cleanliness. The others ranged from fair to unspeakable.

REASONS FOR HOME WORK.

From the worker's standpoint poverty and the difficulty of leaving young children usually account for a woman's beginning home work. Sometimes it is kept up after the need is over, because both the worker and her family have come to look upon it as a normal thing. In a few instances other reasons were found, such as inability to stand the strain of shopwork or the desire to add to an income permitting only the lowest standard of living.

From the employer's standpoint home work is an economy. It saves rent, fuel, light, and supervision, and since home workers are unorganized and peculiarly unable to bargain, prices for work can be beaten down below what shop workers would accept. Employers of the better class object to the system, but often feel themselves obliged by competition to make use of it.

From the standpoint of the public it is an unmixed evil, not only from its deleterious effects upon the home life of the workers themselves, but also from the impossibility of preventing the work being carried on amid unclean and insanitary conditions, sometimes even in the immediate presence of patients ill with contagious or infectious diseases.

THE CLOTHING SHOP AND WORKING CONDITIONS.

For the most part in the clothing shops visited no means of ventilation were provided except doors and windows, under which state of affairs ventilation in the wintertime is apt to be exceedingly bad. Three establishments had suction fans in their windows, and 36 others had such supplemental means of ventilation as air shafts, skylights, etc.

Only 11 shops—4 in Philadelphia and 7 in Chicago—were found above the second floor in buildings unprovided with fire escapes. In these conditions were very bad as the exits were wooden stairways, not infrequently narrow and winding. In many of the shops pro-

vided with fire escapes, however, access to such escapes was blocked or obstructed, or the termination of the escape was such that it was rendered dangerous to use.

As many of the shops were located on the upper floors of high buildings the provision of elevator service was important. The unrestricted use of elevators was allowed to the 6,661 employees of 34 establishments in the five cities. In 7 other establishments a restricted use was allowed; in some cases women, but not men, might ride, in others all employees might ride up but not down, and in others the privilege of using the elevator depended upon the floor upon which the employee worked. In 96 establishments employing 3,478 men, 2,676 women, and 116 children the employees had to climb from three to six flights of stairs to reach their work, either because the building had no elevators or because the employees were not allowed to use them.

The provision of wash rooms was variable. In most of the cities covered by the investigation a wash room was the exception, while a faucet and sink, usually in the workroom, was the rule. Some shops had separate sinks for the two sexes, but this was unusual. A few provided separate wash rooms, well equipped. The following shows the situation as to washing facilities:

NUMBER OF ESTABLISHMENTS HAVING WASH ROOMS, AND EMPLOYEES AFFECTED.

Establishments having—	Number of establishments.	Employees affected.	
		Males.	Females.
Separate wash rooms for males and females	21	2,433	3,049
Wash rooms for females, but not for males	24	1,955	1,656
Only sink and faucet	114	5,322	6,321
No facilities for washing	85	1,536	1,411

The separate wash rooms were found only in the larger establishments.

Twenty-two establishments had dressing rooms for both sexes and 88 others had them for women only; the remaining 134, with 5,342 female employees, had no provision of the kind. The dressing rooms provided ranged all the way from comfortable and well-equipped rooms to small spaces partitioned off from the workroom by walls of thin cloth or frequently of heavy wrapping paper.

The toilet accommodations were found to be inadequate in 40 cases, inconveniently situated in 23, and lacking privacy of approach in 86. In 27 cases the toilets were used in common by both sexes. The conditions as to cleanliness of the closets used by women was in 94 cases good, in 52 fair, in 93 bad, and in 5 cases was not reported.

Lunch rooms were provided in only 6 of the 244 establishments visited, eating in the workrooms being a common practice in the others.

It is a very common sight to see a long row of sewing-machine operators seated before the long table or bench on which their machines rest and the table littered with bits of cloth and thread and food. If the worker is paid on a piece-rate basis, he or she frequently eats lunch while at work. This is true not only of the operators, but also of the employees in other occupations as well; and, as the shops are so often dirty, the ventilation usually poor, and the heat at times excessive, the workrooms are not attractive places in which to eat.[1]

In 210 establishments, employing 97.5 per cent of the employees studied, lunching in the building was customary, and nearly one-half of the employees in these shops followed the custom.

FAMILY CONDITIONS AND SOURCES AND AMOUNT OF FAMILY INCOME.

In order to secure data concerning the home conditions of the garment makers the names of a certain number of women and children were taken from the pay rolls of each establishment investigated, their homes were visited, and detailed information was secured in regard to both the individual workers and their families. The number of families investigated in each city was as follows:

Chicago	614
Rochester	119
New York	853
Philadelphia	312
Baltimore	376
Total	2,274

GENERAL CHARACTER OF FAMILIES.

To a very large extent these families represented the immigrant, and to a less but still very considerable degree the recent immigrant. Classing them by the race and nativity of their heads, only 70 were native born of native parents, 100 were native born of foreign parents, and the remaining 2,104 were foreign born of foreign parents. As a special effort was made to secure information concerning home finishers, and, as the home finishers were mainly Italians, that race is disproportionately represented, forming 45.8 per cent of the entire number of families investigated. Hebrews constituted 17.2 per cent; no other race furnished as much as 10 per cent.

As a rule, most of the woman and child workers in these families were employed in garment making, but the male workers were more

[1] Vol. II, Men's Ready-Made Clothing, p 336.

commonly employed in other industries. There was no distinctive type of garment-making family.

COMPOSITION OF FAMILIES AND EMPLOYMENT OF MEMBERS.

The 2,274 families averaged 5.4 members and 2.9 wage earners apiece. In 81.3 per cent the fathers and in 96.9 per cent the mothers were living and with the family. Eight hundred and twenty-two, or 36.1 per cent, had male children 16 years of age and over, 61.2 per cent had female children 16 years of age and over, 38 per cent had children 14 and 15 years, and 67.9 per cent had children under 16 years. Of the fathers living with their families 91.7 per cent and of the mothers 43 per cent were contributing to the support of the family. The proportion of the children in the various age groups at work was as follows:

Males 16 years of age and over	94.6
Females 16 years of age and over	93.9
Children 14 and 15 years of age	71.8
Children under 14 years	1.5

The proportion of wage-earning mothers probably does not represent the situation among garment workers in general, as the inclusion of the large group of home workers, most of whom were mothers, tends to overweight this class. The proportion of wage earners in the other classes is probably far more normal, though in regard to the children of 14 and 15 it must be remembered that many of these families were selected precisely because they had at least one child under 16 at work.

SOURCES AND AMOUNT OF FAMILY INCOME.

The average net income per family for the entire group was $790. Among the family groups it differs according to the contributing membership. The following table shows the extent of these differences:

Average net income per family of families having—

Fathers at work	$826
Mothers at work	561
Male children 16 years of age and over at work	1,055
Female children 16 years of age and over at work	935
Children 14 and 15 years of age at work	912
Children under 14 years of age at work	777

The families with mothers at work show by far the lowest incomes. In more than half of these 948 families (590, or 62.2 per cent) the mothers were home workers. Comment has already been made upon the extreme poverty of the families in which these workers were found. Families with wage-earning children under 14 show the

next lowest incomes, but these families are so few, only 55 against 649 in the next smallest group, those having children of 14 and 15 at work, that little significance can be attached to these figures.

The proportion of the family income contributed by each group of workers was as follows:

	Per cent.[1]
Fathers	48.4
Mothers	26.8
Male children 16 years and over	36.5
Female children 16 years and over	39.7
Children 14 and 15 years	14.2
Children under 14 years	10.0

Although the fathers make much the most important contribution, they yet do not furnish on an average half of the income, and it is evident that the families would be in a bad way if they depended on the fathers' earnings alone. The daughters 16 years of age and over are the next most important contributors, furnishing nearly two-fifths of the family income.

The difference between the proportion of the incomes contributed by male and by female children 16 years of age and over is somewhat affected by the greater number of female wage earners in this age group; they average 1.6 per family, while the male children 16 years of age and over average but 1.4 per family. On the other hand, the earnings of the females are everywhere lower than those of the males, so that the contributions of the former are proportionately more generous than those of the males.

This is brought out by the following table, which gives for these two groups of workers data concerning average earnings and contributions to family:

AVERAGE EARNINGS OF CHILDREN 16 YEARS OF AGE AND OVER AND AMOUNT AND PER CENT OF EARNINGS CONTRIBUTED TO FAMILY, BY SEX AND RACE.

Nativity and race of head of family	Number of families with—		Children 16 years and over at work.					
			Average yearly earnings of—		Average amount contributed to family by—		Per cent of earnings contributed to family by	
	Male children 16 years and over at work.	Female children 16 years and over at work	Males	Females	Males	Females	Males	Females
Native born, native parents	21	44	$372	$212	$278	$209	74.7	98.1
Native born, foreign parents	55	58	337	241	253	230	72.0	91.3
Foreign born	730	1,250	366	263	292	247	79.8	92.2
Total	796	1,352	366	263	291	245	79.5	93.2

[1] These per cents apply in each case to the incomes of families having workers of the specified class.

These figures do not show much variation between the different race groups, but do show a marked difference between the sexes. The sons never retain less on an average than one-fifth of their earnings for their own use, while the daughters never retain on an average quite one-tenth. Or, in actual amounts, the sons of the three groups given above retain on an average for their own use, respectively, $94, $100, and $74, while the daughters retain $23, $21, and $18. A study of the individual schedules shows that 71.6 per cent of the sons and 87.7 per cent of the daughters paid in all their earnings to the family fund.

MARRIED WOMEN AT WORK; EARNINGS AND FAMILY CONDITIONS.

Including the home finishers, 948 married women in the families visited were found to be at work for wages and assisting in the support of their families. These formed 43 per cent of the married women living with their families. This proportion was made unduly large by the special effort to visit home finishers, who were usually married. Excluding these, 21.3 per cent of the remaining married women living with their families were gainfully employed. In addition 65 other married women were found at work but living with families other than their own.

The condition of the home finishers has already been discussed. The other married women living at home and gainfully employed were thus divided:

CONDITION AS TO HUSBANDS OF MARRIED WOMEN AT WORK.

Condition as to husband.	Number.	Per cent.
Widows	75	21.0
Deserted and divorced wives	22	6.1
Wives of incapacitated husbands	14	3.9
Wives of idle husbands	9	2.5
Wives with husbands at work	238	66.5
Total	358	100.0

The average family membership was 3.8 and the average annual income per family was $664. Since the average annual income of all families having mothers at work was only $561, it is easy to see the effect of the low incomes of the home finishers in pulling down the general average.

These families have been divided into three general classes, according to the reasons which impelled the women to become wage earners. The first consists of the cases in which the mother's earnings were essential to the family support, owing to death, desertion, or low earning capacity of the husband; in the second she was forced to work by the husband's unjustifiable idleness; and in the third her earnings were not, strictly speaking, essential, but she

worked to help raise the family scale of living, to make some provision for the future, to buy property, or to accomplish some particular purpose the family had at heart.

The most significant of the subclasses under these general divisions is the group of married women working because their husbands, though able and anxious to work, could not support their families. There were 81 of these. In 48 cases the husbands' work had been so irregular, through no fault of their own, that their earnings fell below the point of family support; in 4 the husbands had lost positions owing to the business depression and had not succeeded in gaining others, and in 29 the husbands had worked steadily but their earnings were so low that the wives were forced to help out.

Concerning the group in which the work of the wife was not, strictly speaking, a matter of economic necessity, it is worth noticing that in nearly half (64 cases) of these families the household consisted only of husband and wife. Nearly all of these were young people who had not been long married, and the wife was helping to get a good start, with the intention of giving up outside work as her home duties became more pressing.

The number of families in which there were children under 14 was among the home finishers 475, among the other married women at work 173. In the families from which reports were obtained the care of these children while their mothers were at work was provided for as follows:

NUMBER OF FAMILIES OF MARRIED WOMEN AT WORK HAVING CHILDREN OF SPECIFIED AGES, IN WHICH CHILDREN WERE CARED FOR BY SPECIFIED PERSONS.

Relation to children of person taking care of them.	Families of home finishers.					Families of others than home finishers.				
	Number having children of ages—				Total.[1]	Number having children of ages—				Total.[1]
	Under 3	3 to 5	6 to 9	10 to 13		Under 3	3 to 5	6 to 9	10 to 13	
Mother	127	110	124	98	243	.....	.....	2	.....	2
Mother and other person	43	23	19	15	51	.....	.....	.....	.....	.....
Father	7	8	5	3	10	1	5	4	5	10
Father and other person	14	13	8	3	17	2	3	6	7	10
Brother or sister	12	10	13	11	18	.....	.....	.....	1	1
Grandmother	18	13	9	4	20	7	6	5	4	15
Grandfather	1	1	.....	.....	1	.....	.....	1	.....	1
Aunt	13	10	5	1	13	3	.....	2	1	4
Other relative	3	2	1	1	3	1	3	2	3	5
Neighbor	37	35	19	9	54	1	5	3	1	7
Day nursery	.....	.....	.....	.....	.....	2	.....	1	.....	2
No one	.....	.....	.....	.....	.....	.....	2	7	13	16
Not reported	.....	1	1	.....	1	1	1	1	1	2
Total	275	226	204	145	431	18	25	34	36	73

[1] In the details of this table each family appears as many times as it has children of the different age groups. On account of this duplication the totals are not comparable with the numbers in the several columns, the total being the actual number of families considered.

At first sight the children of the home workers seem to fare better than those of the other group, but it must be remembered that those who were cared for by their mothers had only such care as the mother could give in what time was left after from 5 to 10 or more hours' work on finishing. The two groups combined show a total of 231 children under 6 who are cared for by others than the mother. The unfortunate features of such a situation are too evident to need comment.

SINGLE WOMEN 16 YEARS OF AGE AND OVER AT WORK.

About 82 per cent of the 1,987 single women in this age group at work were employed in the men's clothing industry, the remainder working in a variety of industries. The following table shows the age distribution of these women and the length of time they had been at work:

NUMBER AND PER CENT OF SINGLE WOMEN OF SPECIFIED AGES AT WORK AND YEARS SINCE BEGINNING WORK.

Age.	Number.	Per cent of total.	Years since beginning work.	
			Number reporting.	Average years.
16 years	405	20.4	396	2.1
17 years	338	17.0	327	2.9
18 years	289	14.6	280	3.7
19 years	230	11.6	217	4.5
20 years	183	9.2	177	5.0
21 years	136	6.8	132	6.0
22 years	119	6.0	112	6.4
23 years	64	3.2	63	6.9
24 years	43	2.2	42	6.9
25 to 29 years	112	5.6	107	8.6
30 years and over	68	3.4	65	17.3
Total	1,987	100.0	1,918	4.7

The youthfulness of this group is noticeable. One-fifth were only 16 and over three-fifths (63.6 per cent) were under 20. Above 20 the decrease for each age group is rapid. A large proportion of the women had begun work early.

The average age of beginning wage-earning work of all women up to and including the age of 22 was under 16, varying from 13.9 years for those 16 years of age to 15.6 years for those 22 years old. Most of the older women were foreign born, and while many of them had worked on farms before coming to the United States, they usually had not worked for wages. Hence the age at which they became wage earners was apt to be higher than was the case with those born in this country.

The average length of time these women had been at work was 4.7 years. For 1,914 women reports were received as to the number of industries in which they had worked. The great majority, 1,516, or

79.2 per cent, had worked only in one, a fact which seems to tell against the general belief that women in factory employments such as these easily and frequently change not only from shop to shop, but from one industry to another.

The steadiness of employment and the earnings of these women were as follows:

AVERAGE DAYS WORKED DURING YEAR AND AVERAGE ANNUAL EARNINGS OF SINGLE WOMEN 16 AND OVER AT WORK, BY AGE.

Age.	Days worked.	Annual earnings.	Age.	Days worked.	Annual earnings.
16 years	233	$207	23 years	247	$313
17 years	237	228	24 years	237	274
18 years	247	273	25 to 29 years	246	309
19 years	244	287	30 years and over	246	313
20 years	241	281			
21 years	246	310	Total	241	285
22 years	240	310			

The average loss of time, counting 300 days as a full year, was 59 days. The variation among the cities was considerable, owing to the fact that the business depression of 1907–8 was increasing as the investigation proceeded, the loss of time being greatest in the cities last visited.

The average earnings increase steadily with each year of age up through 23, except for a slight decrease at 20, but a sudden drop appears at 24, which is not wholly made up before 30. The table seems to indicate that, as a rule, the higher annual earnings are the result of an efficiency attained by years of experience rather than of regular work.

The average membership of the families to which these women belonged was 6.1, the average annual income was $1,018, and in only 19.9 per cent of the families was the per capita weekly income less than $2.

CHILDREN UNDER 16 YEARS OF AGE AT WORK.

Among the 2,274 families visited there were 684, or 30 per cent, in which there were found 746 working children under 16 years of age. In 55 of these families there were children under 14 at work, and in 649 there were children of 14 or 15 at work; thus there were 20 families in which both children under 14 and children of 14 or 15 were found at work. The children 14 and 15 years of age at work numbered 688, and those under 14 years 58. Most of the working children under 14 were found in Baltimore, where 12 was the legal age for beginning work.

The racial distribution of the families having children under 16 at work and of the children themselves was as follows:

NUMBER OF FAMILIES HAVING CHILDREN UNDER 16 YEARS OF AGE AT WORK AND NUMBER OF SUCH CHILDREN, BY RACE.

Race.	Number of families.	Number of children.	Race.	Number of families.	Number of children.
American	15	19	Lithuanian	13	14
Italian	191	211	Scandinavian	5	5
Hebrew	141	150	All others	33	35
German	109	125			
Bohemian	96	104	Total	684	746
Polish	81	83			

The racial distribution of these children differs somewhat from that of the adults found in the garment-making industry. Of the total adult workers the Germans formed 11.3 per cent, the Hebrews 29 per cent, and the Italians 29.3 per cent. The corresponding percentages for these children under 16 are Germans 16.7 per cent, Hebrews, 20.1 per cent, and Italians 28.3 per cent. The numbers concerned are so small that it is difficult to say whether these proportions have any real significance.

The condition of these children as to parents was as follows:

CONDITION AS TO PARENTS OF CHILDREN UNDER 16 YEARS OF AGE AT WORK.

Condition as to parents.	Children 14 and 15 years.	Children under 14 years.	Total.
Orphans	1	1	2
Children of widows	104	11	115
Children of deserted mothers	14	4	18
Children of incapacitated fathers	25	2	27
Children of idle fathers	13	.....	13
Children with both parents at work	87	10	97
Children with fathers but not mothers at work	444	30	474
Total	688	58	746

Orphanage as a cause for being at work early appears to be almost negligible. Children of widowed and deserted mothers make up a little over one-sixth (17.8 per cent) of the total group, but are relatively more numerous among the children under 14. In both age groups the majority are children in normal families, i. e., with both parents living and not incapacitated. For the children of 14 and 15 the average family membership was 6.8, the average annual income, excluding the earnings of children under 16, $838, and the average weekly per capita income $2.37. For the children under 14 the average size of family was 6.9, the average annual income, excluding earnings of children under 14, was $708, and the average weekly per capita income, making the same exclusion, $1.97. There was plainly

a much greater economic pressure in the case of the children under 14 than in the case of those aged 14 or 15.

The following table shows the number and per cent of families falling within specified groups of weekly per capita income according to whether or not the earnings of the children are included.

NUMBER AND PER CENT OF FAMILIES HAVING SPECIFIED PER CAPITA WEEKLY INCOMES, EXCLUDING AND INCLUDING THE EARNINGS OF CHILDREN.

Per capita weekly income.	Number of families having specified weekly per capita income.		Per cent of families having specified weekly per capita income.	
	Including earnings of children.	Excluding earnings of children.	Including earnings of children.	Excluding earnings of children.
Under $1.50	88	180	12.9	26.3
$1.50 to $1.99	121	128	17.7	18.7
$2 to $2.49	112	93	16.4	13.6
$2.50 to $2.99	94	95	13.7	13.9
$3 to $3.49	90	63	13.1	9.2
$3.50 to $3.99	60	45	8.8	6.6
$4 to $4.49	30	31	4.7	4.5
$4.50 to $4.99	32	21	4.7	3.1
$5 and over	48	28	7.0	4.1
Total	684	684	100.0	100.0

It will be noticed that the difference between the two columns is greatest among the families having the smallest per capitas; this is due to the fact that the earnings of children do not vary much, and that consequently they bear a less important relation to the family income as that income increases.

Among the families visited it was almost the universal custom for children to leave school by the time they were 16, if not before. About 4.5 per cent of all the families with children under 16 at work were so constituted that if the children did not work there were no other members to support the family. These cases were all of families in which fathers did not contribute to the family support and constituted about 19 per cent of such families. The effect upon the family income of the presence of children 16 years of age and over is very noticeable, and apparently makes for a tendency to keep the younger children in school for a longer period.

ORGANIZATION AND DEVELOPMENT OF THE INDUSTRY.

LACK OF CENTRALIZATION.

The concluding portion of the report is devoted to a study of the organization of the garment industry and an account of its development.

From the point of view of control of the successive processes involved in the manufacture and distribution of clothing the industry

is still unorganized and lacks centralization. Few firms carry on the entire process of manufacture from the purchase of the material to the sale of the garment to the customer. To a great extent the various steps in the course of manufacture are attended to by firms which make a special business of one phase or another of the general industry.

After the materials of which the garments are to be made have been bought, the most important steps in the manufacture of clothing are sponging, cutting, making up the garments, and distributing them either by sale to jobbers or retailers, or direct to the consumers through retail stores operated by the manufacturer.

TYPES OF SHOPS.

There are two main types of shop—the inside shop, or one in which the manufacturer has his goods made up in his own shop, and the contract shop, whose owner takes work, generally of one limited type, from the manufacturer, makes it up, and returns it. The manufacturer usually has the cloth cut on his own premises. If his business is extensive, he may do the sponging himself or may send it out to a firm which makes a specialty of sponging. If he has an inside shop, the garments are also made up in part on his own premises, but very few firms make up all their garments in their own shops. "It is doubtful whether as much as 50 per cent of the output of firms owning shops is made up in their own shops." As a rule the best work is done in their own shops and the rest is sent out to contractors.

The inside shop is apt to represent the most favorable conditions in the clothing trade. It is subject to the factory laws as to hours and conditions of cleanliness, safety, etc. Since the best work in done there, skilled employees are needed and child labor is reduced to a minimum. Work is apt to be steady, since in rush times the surplus is given out to contractors, and as the slack season comes on more and more is retained in the shop.

The contract shop is used to some extent for making all grades of clothing, from the very finest to the very cheapest, but its great field is in the manufacture of cheap clothing, where particular care is not required. The contract shop may be large or small. Frequently in its beginning it consists only of the contractor and a few hands; in the first instance, perhaps members of his own family or personal acquaintances. Ordinarily a shop is devoted to the making of only one kind of garment—coat, vest, or trousers.

From the point of view of labor, the disadvantages of the contract system are, in part, poor and insanitary workshops and long hours. The chief evils arise from the small scale on which the contract shop operates. In order to save rent the contractor often

locates in a building, or part of a building, not originally intended, and hence often unsuited, for shop purposes. He is also tempted to crowd in order to save room and rent. His shop has not proper sanitary facilities or adequate light and ventilation and is not kept clean. The shop is usually too small to make profitable the employment of regular caretakers, and the contractor lacks interest. As such shops are numerous and scattered, and as the force of factory inspectors as a rule is inadequate, it is almost impossible to keep such shops up to the standard. This is the universal complaint of factory inspectors. However, in all cities there are some contract shops, particularly among the Germans and Scandinavians, that are model establishments from the point of view of sanitary conditions. * * *

Hours are irregular and work seasonal in the contract shop. In the rush season the work is pursued late. In the "task" shop of New York and in pants and vest shops where work is paid for by the piece regular hours are scarcely known.[1]

DEVELOPMENT OF THE INDUSTRY.

Before the era of ready-made clothing the finer grades of garments were made by the custom tailor, either in his own home with the aid of his wife and children, or in the shop of his employer. Cheaper grade garments were sewed by the women of the household. Female labor was all important in the family production of clothing, and was by no means unimportant in the custom trade.

The introduction of the sewing machine, which came into use about the middle of the last century, greatly increased the possibilities of the industry. Up to the time of the Civil War the South and West afforded the principal market for the rather cheap grade of ready-made clothing manufactured at that time.

The years 1860 to 1880 cover a second era in the development of the ready-made garment industry. The Civil War stimulated it greatly, first by the demand for clothing for the soldiers in the field, and next, when the war ended, by the demand for civilian clothes when the soldiers returned. The business depression of the early seventies maintained and increased this demand, as ready-made clothing was cheaper than the custom garments.

Along with this expansion of the industry went an improvement in the quality of the goods produced. German, Irish, and Scandinavian immigrants were coming into the country extensively, and entered the industry in large numbers. The development was in the main along the lines of the household system. The family—father, mother, sons, and daughters, sometimes with the aid of a few strangers—worked in the home. Urban congestion had not yet reached the degree which it later attained, hence the industry at-

[1] Vol. II, Men's Ready-Made Clothing, pp. 419, 420.

tracted but little attention, and did not give occasion for talk of Government control or regulation.

Beginning with the eighties, great changes took place in the clothing industry. New immigrant races arriving in large numbers began to crowd out the older races. The shop or factory largely supplanted the home as a work place. Steam, gas, and electrical power machines took the place of the old foot-power machines. The quality of clothing was improved, advertising increased, and the market became national. During this period, also, the evils of the sweating system developed and reached such a point that legislative control was invoked.

One of the most important features of this period was the coming of the Russian Jews into the industry. They practically took possession of it in New York City. By excessive competition and finer subdivision of labor they cheapened the cost of production and brought ready-made clothing, more and better grades of it, within the reach of larger numbers of the population. The Bohemians took possession of the trade in Chicago, much as the Jews did in New York. Toward the end of the eighties came the Italians who entered it so numerously that Italian women hold the first place in New York while Italian men are second only to the Jews.

About the middle of the nineties a new period began in the industry, a period of prosperity scarcely interrupted before the panic of 1907. The industry had been brought under State supervision by legislation affecting nearly all clothing centers. Factory legislation and inspection were applied to the problem of better sanitary conditions for the employee, and the worst evils of the tenement shops were abolished. Improved conditions of work, brought about by factory legislation, the growth of inside shops, and the introduction of power are, perhaps, the most notable features in the development of the industry from 1890 to the date of this investigation.

SUMMARY.

The manufacture of men's ready-made garments gives employment to large numbers of women, but their importance in the industry is relatively less since the coming of the Russian Jews into the industry, the introduction of electric power, and the excessive subdivision of work. In the main the women in the industry are young. They do not ordinarily learn the best paid branches, but take unskilled or lower skilled work. Children are not numerously employed, and the industry could easily be so organized as to dispense with their work altogether.

The work is seasonal, and at the time of this investigation there was much irregularity of employment. There seemed no standard

of wages, but what a woman earned might depend almost as much on her bargaining power as on her ability.

Conditions of work varied widely according to whether the worker was in an "inside" or a contract shop. In the latter hours were long and irregular, and sanitary conditions often bad, while in the former hours conformed to legal regulations and conditions were usually good.

The home workers constituted an exception to the general youthfulness of the women in the industry, being usually married women with familes. They were almost exclusively of foreign races, the Italians predominating. Their work was unskilled, irregular, and very poorly paid, their hours irregular, and the surroundings in which the work was done were frequently unfortunate in the extreme.

CHAPTER III.—THE GLASS INDUSTRY.

This report is based on an investigation covering 190 establishments in 17 States. The location of these establishments, the character of their products, and the age and sex distribution of their workers are shown in the following summaries:

NUMBER OF ESTABLISHMENTS INCLUDED IN THE INVESTIGATION, BY CHARACTER OF PRODUCT AND STATE.

State.	Glass industry proper.										Auxiliary industries.		All establishments.
	Glass producing.								Nonglass producing.				
	Flint bottles.	Green and amber bottles.	Jars.	Insulators.	Tableware.	Shades and chimneys.	Blank making.	Novelties.	Decorated ware only.[1]	Vials.	Incandescent lamps.	Mirrors.	
Massachusetts and Connecticut							2		1		3		6
New York	7	1	1			5	1		2			1	18
New Jersey	14		1			1			1		2	1	20
Pennsylvania	17	4	5		13	9	2		4		1	1	56
Ohio	5	4	1		6	4	1	1			1		23
Indiana	11	3	3	1	2	1					1		22
Illinois	4	2	1						1	1			9
Wisconsin, Missouri, and Kansas	1	2	3										6
West Virginia	3		1		11	1		1					17
Maryland	4												4
Virginia	5		1										6
Tennessee, Georgia, and South Carolina	3												3
Total	74	16	17	1	32	21	6	2	9	1	8	3	190

[1] Including glass cutting at factories where the blanks are not made.

It is seen from this table that a total of 190 establishments were covered by this investigation. Of these, however, 11 were engaged in the manufacture of incandescent electric lamps and mirrors, work which, strictly speaking, is not part of the glass industry. Of the 179 factories listed as of the glass industry proper, 169 actually manufactured glass—that is to say, possessed melting furnaces and other equipment for the molding of bottles, tableware, etc., while the remaining 10 factories decorated and otherwise finished glass articles produced elsewhere.

The total number of persons normally employed by these 179 glass factories was 54,964, of whom 45,210 were males 16 years of age and over, 4,049 were females of 16 years and over, and 5,705 were children under 16 years of age. The 8 electric-lamp establishments em-

ployed 4,143 persons, of whom 815 were males of 16 years and over, 3,244 females of 16 years and over, and 84 children under 16 years of age. The 3 mirror factories were proportionately small, employing in total but 260 persons, of whom 186 were males 16 years and over, 66 females 16 years and over, and 8 children under 16 years of age. The distribution of these persons by States and by the sex of the children is shown in the next table:[1]

NUMBER AND PER CENT OF MALE AND FEMALE EMPLOYEES UNDER 16 YEARS OF AGE AND 16 YEARS OF AGE AND OVER IN THE ESTABLISHMENTS INVESTIGATED, BY BRANCH OF INDUSTRY AND STATE.

State and branch of industry.	Establishments visited.	Employees.										
		Number.						Per cent.				
		16 years and over.		Under 16 years.			Total.	16 years and over.		Under 16 years.		
		Male.	Female.	Male.	Female.	Total.		Male.	Female.	Male.	Female.	Total.
GLASS INDUSTRY PROPER.												
Massachusetts and Connecticut	3	838	111	42	3	45	994	84.3	11.2	4.2	0.3	4.5
New York	17	3,161	260	92	14	106	3,527	89.6	7.4	2.6	.4	3.0
New Jersey	17	5,748	137	497	24	521	6,406	89.7	2.1	7.8	.4	8.1
Pennsylvania	54	9,673	1,288	1,812	327	2,139	13,100	73.9	9.8	13.8	2.5	16.3
Ohio	22	7,874	717	515	52	567	9,158	86.0	7.8	5.6	.6	6.2
Indiana	21	6,686	369	524	40	564	7,619	87.8	4.8	6.9	.5	7.4
Illinois	9	5,366	424	338	7	345	6,135	87.5	6.9	5.5	.1	5.6
Wisconsin, Missouri, and Kansas	6	1,385	105	104	3	107	1,597	86.7	6.6	6.5	.2	6.7
West Virginia	17	2,872	607	646	111	757	4,236	67.8	14.3	15.3	2.6	17.9
Maryland	4	654	29	392	2	394	1,077	60.7	2.7	36.4	.2	36.6
Virginia	6	592	2	90	.....	90	684	86.5	.3	13.2	.....	13.2
Tennessee, Georgia, and South Carolina	3	361	.....	70	.....	70	431	83.8	.....	16.2	.....	16.2
Total	179	45,210	4,049	5,122	583	5,705	54,964	82.3	7.4	9.3	1.0	10.4
ELECTRIC LAMPS.												
Massachusetts, New Jersey, Ohio, Pennsylvania, and Indiana	8	815	3,244	12	72	84	4,143	19.7	78.3	.3	1.7	2.0
MIRRORS.												
Pennsylvania, New Jersey, and New York	3	186	66	5	3	8	260	71.5	25.4	1.9	1.2	3.1

The number of woman and child glassworkers covered by this investigation may be accepted as thoroughly representative of the employment of such persons in the glass industry. Thus in the year 1908 there were 288 glass factories manufacturing pressed and blown glassware (the branches of the industry covered by this report) in the United States. Of these 169, or 58.7 per cent, were covered by the investigation. Of the 119 not covered 61 were not in operation, and therefore could not have been scheduled. In total, therefore, only 58, or approximately one-quarter of all the factories in operation, were not covered.[2]

[1] Vol. III, Glass Industry, p. 17. [2] Idem, p. 18.

DIVISION OF WORK BETWEEN THE SEXES.

The information thus secured has been treated under four heads—the employment of boys in glass furnaces, the employment of women and girls in glass furnaces, the employment of women and girls in making incandescent electric lamps, and the family conditions and the amount and source of income in the families studied. In the industry itself the labor of women and girls is usually very sharply separated from that of men and boys. The typical glass factory is divided into two distinct departments: The molding or "furnace" department and the elaborating or finishing department. This division marks a clear distinction in the type of building used, the character of the work, and the personnel of the working force.

The furnace department, or, as it is commonly known, the furnace room, is usually a one-story building, of rough and open construction, in order to dissipate as much as possible the heat of the large glass-melting furnaces. The workers here are constantly engaged in handling molten or at least highly heated glass, and the appliances and physical surroundings are adapted to that end. The work itself is regarded by nearly all employers as the work of men or boys, and as not being suitable for women or girls.

The finishing department, on the other hand, is usually a structure of two or more stories, resembling in its main features the common type of factory building. The work is much lighter than that of the furnace room, largely of a decorative character, and in great part at least adapted to the physical abilities of women. Adult male labor is not uncommon, particularly with the heavier and more skilled finishing work, but boy labor is little used in the finishing department.

* * * The furnace room represents the boy labor aspect of the glass industry; the finishing department represents the woman and girl labor aspect. The few women found in furnace rooms are working in what is universally regarded as boys' occupations, and are being used as substitutes for boy labor. On the other hand, almost all of the women in the industry and very few boys are engaged in handling ware after it has been molded and annealed in the furnace room.[1]

WORK OF BOYS IN THE FURNACE ROOM.

The great majority of boys are found in five occupations. As mold boys they sit or stand at the blowers' feet and tend the molds, opening and shutting them as required by the blower. As cleaning-off boys they stand beside the blower and clean the blowpipe after each using. As snapping-up boys and carrying-in boys they are engaged in carrying ware, the first from the blower to the finisher, the second from the finisher to the leer. As machine boys they perform the unskilled work needed in connection with the press or blow machine.

[1] Vol. III, Glass Industry, pp. 21, 22.

About 90 per cent of the boys studied in this investigation were employed in these five occupations, the remainder being scattered among a variety of minor occupations.

DESCRIPTION OF PRINCIPAL OCCUPATIONS.

The character and degree of the physical strain involved differs materially in these occupations. The mold boy's work is not usually heavy, but often involves a constrained, crouching attitude, and since the boy's position is directly in front of the furnace he works in a very high temperature. Tests made with a thermometer showed boys working in temperatures ranging from 93° to 116°. His work is also rapid and continuous.

The cleaning-off boy usually works standing. His work consists of scraping off the clot of excess glass which remains on the pipe after each blowing, which is done by pulling the glass clot over an iron rasp. This, although a simple operation, requires some little physical strength and skill and is usually reserved for the older and more experienced boys. The boy's position is usually 3 or 4 feet from the furnace and, like the mold boy, he is exposed to very high temperatures.

The snapping-up boy picks up the article placed by the mold boy on the stand, places it in a long-handled holder, carries it to the finisher's bench, rubs the neck or upper edge against an iron rasp to remove the excess glass, and inserts the article in the "glory hole," or reheating furnace. He is constantly in motion; in addition to the walking the work demands constant arm movement, some bending, and in general an incessant activity of the whole body. The weight carried at any one time is not excessive, but a real hardship is involved in the necessity of looking into the bright, glaring light of the glory hole.

The carrying-in boy takes the ware when the workers at the furnace have finished with it, carries it to the annealing oven or leer, and deposits it inside. This must be done with reasonable dispatch, as newly molded ware will spoil if left too long exposed to the outer air. As a result, the boy must make quick trips back and forth, each time carrying a limited number of articles. Ordinarily the daily distance traveled by a carrying-in boy does not much exceed a mile an hour.

The machine boy's work requires close attention and considerable endurance, and involves considerable nervous tension. Next to the mold boy, the machine boy commonly occupies the warmest position of any of the boys.

In order to relieve the strain of continuous work at any one of these occupations a system of exchanging positions is often adopted.

Frequent interchange of occupations is almost always possible, and in the majority of furnace rooms is practiced as a trade custom. In some factories this interchange is enforced by the management, the boys of all or of selected occupations being required to exchange places at certain specific periods, quarter hour, half hour, etc. At other factories the management does not enforce the exchange, but the workers may arrange among themselves to do so.[1]

WORKING CONDITIONS.

From the standpoint of the boy's physical welfare the three most objectionable features of the work are the glass dust in the air, the broken glass on the floor, and the intense heat in which the work is often carried on. The glass dust comes partly from the glass on the floor, but far more from what is known as "blow-over," the name given to those gossamer-like flakes of filmy glass that are usually found floating in the air of a bottle house. When a bottle has been blown into form in a mold it is necessary to detach the blowpipe without injuring the neck of the bottle. To do this the glass between the top of the mold and the butt of the blowpipe is blown into a thin bubble which can be easily broken. This can be done so as to cause practically no blow-over, but it is "quicker and easier to blow hard enough to inflate and burst this portion of the glass by internal air pressure. When this is done the bubble explodes with a popping noise and its walls fly into the air, often into the mold boy's face, and the light particles of glass float in the air currents of the room."

The degree to which blow-over is present differs greatly with the speed and carefulness of the blowers. It is by no means an inevitable feature; in some factories such precautions were taken that it was a negligible evil, while in others it constituted a serious menace.

In some factories at times the air is so full of this floating glass that the hair is whitened by merely passing through the room. It sticks to the perspiration on the faces and arms of the boys and men, and becomes a source of considerable irritation. Getting into the eyes, it becomes especially troublesome.[2]

This dust is said to be the cause of much temporary skin and eye irritation; just how serious these effects are has not been determined. It is a truism, however, that the inhalation of irritating dust predisposes to diseases of the respiratory passages, and it is known that its presence in considerable quantities in workrooms is always accompanied by a high death rate, especially from consumption.[3]

"Furnace-room floors are either of brick or cement. In either case they are quite commonly broken, uneven, or rough." This roughness is not especially an evil of itself, but it increases the danger from

[1] Vol. III, Glass Industry, p. 59. [2] Idem, p. 66 [3] See p 135.

the broken glass with which the floors are very commonly littered. In making glass there is necessarily some breakage; also there is an appreciable percentage of imperfect ware to be discarded at various stages of the work. Receptacles of some sort are usually provided for such ware, but in the hurry of the work flawed articles are often carelessly thrown, fall upon the floor, and break. As a result the snapping-up and carrying-in boys, often badly shod, must walk back and forth upon a floor littered with broken glass. Foot cuts are frequent and a fall may cause severe laceration. Incidentally, this state of affairs is expensive for the employees, being very destructive to shoe leather.

The principal direct sources of heat in a furnace room are the furnace, the leers or annealing furnaces, the reheating furnaces, and the portions of hot glass gathered on the blowers' pipes. The indirect sources are the heated molds, presses, and other machines. Of them all, the furnace, of course, is most effective in raising the temperature. The furnace is either a round structure situated wholly within the room or the rounded end of a structure partly outside the room. In the first case it contains a series of arched openings, within each of which is a clay pot, one side exposed to the fire in a central pit, the other flush with the inner wall of the furnace. In these pots is the melted glass which the blower reaches with his pipe through the opening. In the second case the semicircular end is really a tank into which melted glass flows from the other portion. Like the round furnace, this tank is pierced with working holes.

The generally accepted figures of the heat within a furnace during the fusing are 2,507° F. between the pots and 2,390° F. in the metal itself. These temperatures are reduced when the holes are opened for working to a standard of 1,913°, although glass is commonly worked at a temperature of 100° less than this figure. In furnaces of the second type, known as "tank" furnaces, the working end is kept at 1,913°. In both types the working holes must be kept open while blowing is in progress. "Thus the great heat generated in the furnace escapes into the workroom, not only by a secondary radiation from the walls of the furnace, but to a much greater degree by direct radiation through the working holes." The reheating furnace or glory hole is usually maintained at a temperature of 2,200° F., while the annealing furnaces are kept at from 800° to 1,200° F., according to the kind of ware made.

Furnace rooms are usually made open to all the winds that blow, so that the temperature varies decidedly from one part to another. On a June day when the outside temperature was at 78° a series of thermometer readings taken in a given factory showed that the tem-

peratures in which various workers were carrying on their activities ranged from 93° up to 132°.

It is difficult to say whether these extreme temperatures are more harmful in summer or winter.

In the warm weather the ill effects of the heat show themselves directly in the form of prostration or affections directly due to the high temperatures. In the winter the immediate danger to health arises from sudden changes in temperature. The open character of building which diminishes the heat in summer also allows the winter cold to penetrate. The zones of heat immediately around the furnace, the glory hole, and the leer are of almost the same degree in winter as in summer, but the temperature of the areas outside these zones is reduced almost to the level of the temperature outside of the factory. As a result the boys, especially those whose occupations keep them moving about the factory, are subjected to considerable and often violent changes of temperature. * * * This danger to health is likewise present when the boys leave the factory for their homes.[1]

Much of this high temperature is unavoidable, but it could be moderated to some degree by care in placing the various furnaces, by providing devices for keeping the leer mouths closed except when ware is being put in, by supplies of cool air, etc. All these plans were found in use in one factory or another, but none were common and some were found in only a single instance.

Minor accidents, due to cuts and burns from flying pieces of glass, were common, but serious accidents seemed very rare.

HOURS OF LABOR, NIGHT WORK, AND OVERTIME.

Since the boys are mainly employed as helpers to the skilled workers their hours tend to be the same. The great majority of the skilled workers belong to one or the other of two unions, both of which carefully regulate the number of working hours. One allows 50½ hours per week daywork and 42½ hours night work, while the other sets the limit at 49½ hours for both day and night workers. Of the 5,009 boys for whom information on this point was gained, 79 per cent worked weekly hours falling within these limits. The following table gives the number of boy workers studied in each State and the percentage working less than specified hours. The night workers, 2,792, or 55.7 per cent of the total number, alternated weekly between night and day work, so that they are included with the day workers as well as given separately.

[1] Vol. III, Glass Industry, pp. 76, 77.

PER CENT OF BOYS OF DAY AND OF NIGHT FORCE WORKING LESS THAN SPECIFIED HOURS PER WEEK, BY STATES.

Dayworkers.

State.	Number of persons.	Per cent working less hours than—		
		52	50	48
Illinois	334	100.0	98.8	97.3
New York	83	100.0	80.7	78.3
West Virginia	640	93.3	80.6	.....
Ohio	509	90.8	54.0	9.2
Pennsylvania	1,755	93.0	43.5	6.1
Massachusetts and Connecticut	24	37.5	37.5	37.5
New Jersey	484	100.0	23.1	.....
Indiana	524	72.3	12.6	9.5
Maryland	392	100.0	.....	.....
Tennessee, South Carolina, and Georgia	70	100.0	.....	.....
Virginia	90	98.9	.....	.....
Kansas, Missouri, and Wisconsin	104	95.2	.....	.....
Total	5,009	.....	.....	.....

Night workers.

State.	Number of persons.	Per cent working less hours than—			
		50	48	46	44
Tennessee, South Carolina, and Georgia	64	100.0	100.0	100.0	100.0
Virginia	52	100.0	100.0	100.0	100.0
Maryland	50	100.0	100.0	100.0	100.0
New Jersey	244	100.0	100.0	91.1	83.6
Indiana	500	87.2	84.0	66.8	52.8
Ohio	254	86.6	56.7	56.7	21.3
Kansas, Missouri, and Wisconsin	18	100.0	100.0	44.4	22.2
Pennsylvania	1,156	85.1	57.3	44.1	33.6
West Virginia	454	95.6	21.1	21.1	17.2
Total	2,792	.....	.....	.....	.....

It will be observed that Indiana is the only State having a large number of young workers in which any considerable portion of the day force worked 52 hours or over. Among the night workers only four States show a week of 50 hours or over.

NIGHT WORK.

Night work is an established feature of glassmaking. Of the 169 furnace rooms studied, 126 were regularly operating two shifts of workers, one by day and one by night, and of the remaining 43 several were accustomed to do so from time to time, although during the year covered they did only daywork. The night force, however, is frequently smaller than the day force. Consequently a portion of the working force is liable to become a permanent day force, while the remainder is divided into two shifts, each working at night on alternate weeks.

This alternation of night work of boys was not distributed among the States with any uniformity. In some States no boys were found working at night; in others nearly all the boys employed so worked. This variation in practice is shown in the following table, the States being arranged in ascending order of frequency of night work.[1]

NUMBER OF BOYS WORKING ON DAY SHIFT AND ON DAY AND NIGHT SHIFT ALTERNATELY AND PER CENT WORKING AT NIGHT, BY STATES.

State.	Total number.	Boys under 16 years of age working.						Per cent of boys working at night.
		Day only.	Day and night, alternate weeks.					
			Total number.	6 days, 5 nights.		6 days, 6 nights.		
				Number.	Per cent.	Number.	Per cent.	
Illinois	334	334	.....	.....	.....	.....	.....	.....
New York	83	83	.....	.....	.....	.....	.....	.....
Massachusetts	24	24	.....	.....	.....	.....	.....	.....
Maryland	392	342	50	50	100.0	.....	.....	12.8
Kansas, Missouri, and Wisconsin[1]	104	86	18	8	44.5	10	55.5	17.3
Ohio	509	255	254	154	60.6	100	39.4	49.9
New Jersey	484	240	244	244	100.0	.....	.....	50.4
Virginia	90	38	52	52	100.0	.....	.....	57.8
Pennsylvania	1,755	599	1,156	605	52.3	551	47.7	65.9
West Virginia	640	186	454	96	21.1	358	78.9	70.9
Tennessee, South Carolina, and Georgia	70	6	64	64	100.0	.....	.....	91.4
Indiana	524	24	500	368	73.6	132	26.4	95.4
Total	5,009	2,217	2,792	1,641	58.8	1,151	41.2	55.7

[1] No night work regularly done by boys under 16 in Missouri or Wisconsin.

As a result of the weekly alternation in night work, during half of his time the boy may live a normal life. On the other hand, the practice of alternation renders even more difficult one of the most serious problems of night work—the problem of sleep. It means that one week the boy must obtain his sleep in the daytime and the following week in the nighttime. Proper adjustment to varying sleeping periods is not an easy accomplishment for either adults or children. It was the almost unanimous opinion of night foremen and adult glassworkers interviewed that this periodic change in the time of sleeping was, at the least, physically undesirable. They agreed that, although it was not possible to trace an ailment to this specific source, they always "felt better" when working only by day. Of the same character was the testimony of mothers of boys working on the night shift. And that night work is regarded as "harder" by the boys themselves as a class is evidenced by the fact that most factories must offer a higher wage for night work than for daywork in order to obtain a full complement of boys.

Those adult workers who expressed themselves as pleased with night work supported their views largely on the ground that, by limiting the amount of sleep, nearly the whole of the daylight following a night of work could be used for the purpose of pleasure. This is a view that appeals to some boys. The night shift quits work

[1] Vol. III, Glass Industry, p. 97.

usually at 3 a. m. By hurrying to sleep and reducing the sleeping time the boy will have a large part of the daylight for play, whereas if he works on the day shift he has only the evening darkness in which to have his fun. During the present investigation it was not at all uncommon to find on the street as early as 9 a. m. boys who had worked on the previous night shift and had quit as late as 3 a. m.

A boy working on the night shift must, therefore, first of all, accustom himself to sleep in the daytime; second, he must accustom himself to a weekly change of sleeping periods; and, third, when working at night and sleeping by day he must resist the natural desire of the boy to curtail his sleep for the sake of a longer play time. There is a strong probability of there being unsuitable surroundings for daytime sleeping. The majority of shop boys come from homes in which the standard of living is rather low, the houses small, the rooms crowded. If in the larger cities, these houses are usually in the more congested sections, where the street noises are greatest and the street life early astir. Under such surroundings a restful daytime sleep is frequently unobtainable.

The second source of danger to the health of children incident to their working at night in the glass factory arises from the almost universal custom of arranging the hours of labor so that the night shift ends in the very early morning. This happens usually about 3 o'clock, the time when the weather is most severe and the time when the boy, through sleepiness and anxiety to get home, is least likely to consider the guarding of his health. Always he is overheated from his work, frequently in a state of perspiration. Only very rarely does he have extra or sufficient clothing to protect him in the change to the outside temperature. Often, too, he has a long journey home. Very often the factory is well away from the town proper, seeking, as it does, cheaper land and better railroad facilities. In such cases the main approach is almost always along railroad tracks, but local train or street car accommodation is seldom available so early in the day.

The recent extension of interurban electric lines has tended to increase this evil. Boys from the farms, living several miles from the factory, are by reason of electric interurban lines enabled to obtain work, a few factories even offering to pay the car fares of such boys. The car line, however, rarely has an all-night service, and the boys on the night shift, quitting about 3 a. m., must wait for the first morning car, arriving possibly not until 5 or 6 o'clock. This interval of two or three hours the tired boy is naturally tempted to bridge by sleeping in the factory. In one Ohio establishment it was found that several of the boys in thus waiting for the car slept in the open beside the tracks.

Even, however, when the boy's home is not beyond walking distance, the temptation to sleep in the factory may still be very strong. For not only is the actual length of the homeward journey a hardship but the character of the road that must be traversed is a matter of almost equal concern, especially if the boy can obtain no company on his way. In one instance a factory is so situated that many of the boys in order to reach their homes must pass through a cemetery; in another the easiest and most used approach is through a railroad tunnel. Because of these and other things many of the boys inter-

viewed evinced a strong dislike, some a positive horror, of the early morning journey from the factory.

As a result of such causes—the distance to the home, the fear of something along the route, fatigue from the work, unfavorable weather—the boy is often unwilling to return to his home, preferring to sleep in the factory, at least until daylight comes. It was impracticable to ascertain the exact number of boys who indulge in this practice. Some factory managements prohibit it entirely and enforce the prohibition; others, because of their location, offer no reason for the boys not going to their homes. In a few factories, however, sleeping in the factory buildings is a regular custom, and in several others the practice is engaged in more or less frequently. The formal sanction of the head management for such a practice is probably nowhere given, but many foremen do not discourage it. Usually this attitude of the foremen is due simply to good nature; but occasionally business interest may be responsible. For if a boy remains in the factory too long after the ending of one shift he is in a position to be impressed for service on the next shift. As the foreman usually retains his position by virtue of his ability to obtain a certain daily output, the temptation to so impress a boy when help is scarce may be too strong to be resisted. Moreover, as the boy has had some three or four hours' sleep between the ending of the one shift and the beginning of another, he very often feels refreshed enough to be willing to begin work again.

For sleeping in the factory there are no accommodations whatever. The boy lies upon the floor or upon a pile of boards or boxes. At times, for warmth's sake, he cuddles up beside the leer. He has, of course, no change of clothing and most probably no covering of any kind.

The danger to a child's health inherent in either alternative—journeying home in the night weather, sleeping in or outside the factory—is most palpable, and this fact or custom may be more or less responsible for the more common and more dangerous diseases of the glass workers, diseases of the respiratory organs, that often do not become apparent in a serious degree until many months, or even years, after the original exposure.[1]

At the time of this investigation night work was prohibited for children under 16 in five States—New York, Ohio, Illinois, Missouri, and Wisconsin. In four of these States the law was observed with considerable strictness, but in Ohio it was in dispute and by a large number of factories was not even ostensibly observed. The table already given shows the number and the distribution by States of the boys under 16 who were found working at night on alternate weeks.

OVERTIME.

There is very little overtime, in the ordinary sense, in a glass factory. The skilled men usually work the union hours and then stop, and the need for boys' labor stops with them. The custom of

[1] Vol. III, Glass Industry, pp. 109–111.

operating two shifts, however, makes possible a very serious form of overtime—double-shift work. A boy who has worked through one shift may work the whole or part of the succeeding one, all within a period of 24 hours.

If a boy works a full double shift he is on duty 20 hours out of the 24, and is actually working 17 to 18 hours. Notwithstanding the physical strain of such long hours, double-shift work is by no means uncommon in certain factories at busy seasons. * * * Very often, however, the services of the boy are not required for the full double shift. He may split the extra work with another boy or may work only a portion of the second shift. The most prevalent form of this practice is that of "doubling up" Friday night. This consists of working the full Friday-night shift and one-half or one-quarter of the Saturday shift. As no work is done Saturday night or Sunday an opportunity is given for recuperation.[1]

The following table shows the extent to which double-shift work had prevailed during the year preceding the investigation among 1,292 boys who were especially investigated with regard to this point:

NUMBER OF CASES OF DOUBLE-SHIFT WORK BY BOYS UNDER 16 YEARS, BY AGE.

Age.	Number of boys working double shift.	Number of cases of double-shift work.	
		Total.	Average per boy.
12 years	2	35	17.5
13 years	15	124	8.3
14 years	53	734	13.8
15 years	50	752	15.0
Total	120	1,645	13.7

This form of overwork, of course, is impossible in States in which night work is prohibited and a maximum day is fixed.

EARNINGS.

The wages for boys in the furnace room are by no means uniform, even for those of the same age. Wages differ from factory to factory, often for no discernible cause beyond the fact that boy labor is comparatively immobile. In general, boys under 16 will work near where their families live, and will take such wages as they can get in that locality, even though better wages are paid comparatively near at hand. Thus in one factory near Pittsburgh the usual wage for boys under 16 is 75 cents a day, while in another, not 6 miles away, it is 95 cents. One extreme case was found in which boys under 16

[1] Vol. III, Glass Industry, pp. 113, 114.

and even a few of 17 and 18 were found working for as low a wage as 39½ cents a day, while in another factory not far distant boys no older than these were receiving as much as $2 a day. Such differences depend on locality, not on race or occupation.

Among furnace-room boys age is decidedly the most important single factor influencing variations in the wage rate. Next in importance is that of factory location. Other factors such as race, occupation, character of product, and even individual efficiency are of minor significance.[1]

The rate of wages is of less importance than the actual earnings, the latter, of course, being affected by the regularity of the work. The following table shows both the rate of wages (full-time earnings) and the actual earnings of 3,615 boys for whom detailed information on this point was secured:

COMPARISON OF FULL-TIME WEEKLY EARNINGS WITH ACTUAL WEEKLY EARNINGS OF BOYS UNDER 16 IN THE FURNACE ROOM.

Classified weekly earnings.	Males under 16.			
	Full-time weekly earnings.		Actual weekly earnings.	
	Number.	Per cent.	Number.	Per cent.
Under $2			265	7.3
$2 to $2.99	35	1.0	351	9.7
$3 to $3.99	348	9.6	555	15.4
$4 to $4.99	1,081	29.9	949	26.2
$5 to $5.99	953	26.6	830	23.0
$6 to $6.99	1,013	28.0	570	15.8
$7 to $7.99	90	2.5	62	1.7
$8 to $8.99	61	1.7	22	.6
$9 to $9.99	16	.5	10	.3
$10 to $11.99	8	.2	1	(1)
Total	3,615	100.0	3,615	100.0

[1] Less than one tenth of 1 per cent.

It appears that a small number of these boys, 35, were working for a wage of less than $3 a week, and a still smaller number, 24, for $9 a week or over, but the great majority, nearly 85 per cent of the total, were almost equally distributed in the three groups included between $4 as a minimum and $6.99 as a maximum. Thus the usual as well as the median wage for such boys may be said to lie between $5 and $6 a week, probably nearer the latter amount.

On the other hand, on the basis of actual weekly earnings taken during a representative pay period, 616 of the boys earned less than $3 as against 35 whose nominal wages fell below that sum. Only 33 actually earned $8 or over, as compared with 85 whose rate was that much, and the median earnings drop well below $5 a week.

[1] Vol. III, Glass Industry, p. 129.

In 81 of the 169 furnace rooms investigated payment of wages was made every week, in 87 biweekly or semimonthly, and in 1 monthly. Usually the money due was paid directly to the boy, whatever his age. Bonuses were frequently offered to induce boys to work steadily. Sometimes a percentage of the earnings was held back and paid only after the boy had worked a certain length of time in order to secure the same end, steadiness. Fines for any purpose were very unusual.

IMPORTANCE OF BOY LABOR IN GLASSMAKING.

In view of the argument often advanced by glass manufacturers that legislation restricting the employment of children means ruin to their industry, the number and relative increase or decrease of boys under 16 in such work is a matter of interest. In 1880 almost one-third (29 per cent) of all the males in the industry were under 16 years of age and almost two-thirds (65 per cent) of all males in specific boys' occupations were under 16. At this time there were practically no legislative restrictions upon the employment of children in glass factories. In 1905 only about one-eighth (12.6 per cent) of the males in the industry were under 16. The decrease in the importance of young workers may be more effectively shown by the average number of such per pot. At each pot of a furnace works a group known as a shop, consisting of three skilled workers and the necessary unskilled helpers—mold boy, cleaning-off boy, snapping-up boy, etc. In 1880 the average number of males under 16 per pot was 2.6; by 1905 it had sunk to 0.7. During these 25 years the actual number of males aged 16 or over in the industry had risen from 13,201 to 39,348, while the number of males under 16 had increased only from 5,398 to 5,667. The child worker was evidently of diminishing importance in the industry, a fact due partly to restrictive legislation and partly to the difficulty of securing a supply of young boys equal to the demand.

The importance of boy labor in glass making may be measured in another way, by a comparison of the cost of production when employing boy labor with the cost of production of the same articles with boy labor entirely eliminated. Children are employed as mold boys, snapping-up boys, carrying-in boys, etc., primarily because they will work for a lower wage than will boys of 16 or over. That they do work for a lower wage is not a matter of dispute. The wage data gathered for this report show that in any community the pay of the furnace-room boys tends to vary directly with their ages. Up to the age of 21 years it is correct to say that the older the boy the higher his wage.

Granting, therefore, that the employer does effect a saving by employing young boys, the question of the amount of such saving

naturally arises. If a glass manufacturer employing boys under 16 exclusively and paying them the usual wages of such boys should suddenly substitute boys of 16 and over, paying them the usual wages of such persons, what would be the additional cost to him per unit of product?

The character of the glass industry is such that this question can be answered with considerable exactness. The item of boy-labor cost in a given article can be isolated and a study made of the variations in costs which would follow changes in the wages of boys.

Such a study was made in the course of this investigation. The cost data used in the study were from a representative prescription-bottle factory. Three and one-half years' production for the plant was used as the basis for costs.

The result of the analysis of these costs is given in the following table, which shows in a striking way the insignificant increases in cost which would be produced by the entire elimination of the labor of children under 16 years of age and the substitution of adult labor.

INCREASED COST OF MANUFACTURING THREE SIZES OF BOTTLES IF CHILD LABOR WERE ELIMINATED.[1]

Character of bottle.	Cost of gross of bottles with—		Increase in cost.	Per cent increase in cost.
	Boy-labor force as at present.	Children eliminated.		
4-ounce	$1.3361	$1.3508	$0.0147	1.100
8-ounce	1.8148	1.8277	.0129	.711
16-ounce	2.6309	2.6449	.0140	.532

[1] Vol. III, Glass Industry, p. 207.

SUBSTITUTES FOR BOY LABOR.

In the effort to fill the place of the young boy three substitutes have been tried—machines, women, and adult males. At the time of this investigation the so-called automatic blowing machine was in use in a few shops. It tends to reduce greatly the number of boys employed and also to raise the age of young employees, since boys under 16 can hardly be used to advantage with it. Should its use become general, the problem of child labor in the industry may easily cease to exist. Women could undoubtedly do the work, but a strong public sentiment exists against employing them in the furnace room, and the glassmen themselves are apt to share this feeling. In 1904–1906 three bottle factories—two in the Middle West and one in the East—introduced negro women and girls in the furnace room. In the eastern factory the experiment was soon given up, but in the other two it proved financially successful and was continued.

In these two establishments the women were employed exactly as boys would have been, working in the usual close association with men. At the time of this investigation 51 such women were employed, 9 working in the daytime only, while the remaining 42 worked on both day and night shifts, the day shift of one week becoming the night shift of the next; 21 were from 16 to 20 years old, and 18 from 21 to 30; 24 were single, 22 married, and 5 widowed or separated from their husbands. The conditions of employment, such as exposure to fierce heat, constrained position, continuous standing or steady walking, rapid work, etc., are in nowise modified for these women. Obviously such conditions would frequently tell more severely upon women and girls than upon boys, and the women have the added hardship of the men's attitude toward them. Moral conditions were said to be exceedingly bad.

In one factory white women and girls were found working at a boy's occupation, but separated from the male workers. The factory was two-storied, with the furnace on the second floor. A series of chutes led from each group of blowers to the first floor. The bottles when blown and finished were placed on the chutes and thus conveyed to the first floor, where girls and women carried them to the annealing ovens. By this system the girls were not exposed to the highly objectionable conditions of the furnace room. Their work, however, was hot and heavy, and, owing to the danger of breakage on the chute, the system can be employed only for certain kinds of ware.

So far adult men have proved the principal substitute for boy workers. The manufacturers themselves are somewhat divided in opinion as to whether men can do work of this kind as well as boys can, but the belief that they can do it satisfactorily seems to be increasing. Foreigners are preferred as being at once cheaper and more manageable than native-born workmen. There are two admitted drawbacks to their employment: They must be paid higher wages than will satisfy boys and they do not afford a supply of recruits for the skilled positions.

OPPORTUNITIES FOR BOYS TO LEARN THE TRADE.

There is an almost entire absence in the furnace room of intermediate positions between the simple, unskilled work of the boy and the highly skilled work of blowing. The latter position is attained by way of apprenticeship, and apprentices are not always drawn from the shopboys of the particular factory. If a boy becomes an apprentice he is assured of ultimate journeymanship; if he fails to become an apprentice, and his chance practically disappears after he is 18, or at most 19, years of age, he remains in the industry as a shopboy to the end. For the young shopboy, therefore, his opportunity of becoming an apprentice before he is too old is a matter of utmost importance.[1] * * *

[1] Vol. III, Glass Industry, p. 233.

But the number of apprentices who may be taken on is strictly limited by the unions. The regulations on this subject are given in considerable detail, but the important point is the conclusion:

It will be seen that apprentices are taken on each year in the ratio of 1 apprentice to from 10 to 25 journeymen. As the number of shopboys in the usual furnace room is normally at least one-fifth greater than the number of journeymen blowers, it would thus appear that the usual shopboy has about 1 chance in from 12 to 30 of being apprenticed each year. Furthermore, as the opportunity of being apprenticed practically ceases at the age of 18, and as in most of the States concerned a boy can not legally work before he is 14, his ultimate chance of becoming an apprentice is about 1 in from 3 to 7. In other words, it would appear that if all shopboys began work at the age of 14, 1 out of each 3, 4, 5, or 6, depending on the specific regulation or agreement, would become apprentices. Those failing to become apprenticed would, as noted, have practically no hope of afterpromotion in the industry.[1]

ILLEGAL EMPLOYMENT OF BOYS.

Three types of illegal employment were considered: Employment under legal age, employment without affidavits or certificates as prescribed by law, and employment for more hours per day or per week than permitted by law or at prohibited times.

EMPLOYMENT BELOW LEGAL AGE.

Each of the States investigated had a minimum age limit below which employment was illegal. In 11 this age was 14 and in 5 it was 12: in 3 of the latter exceptions were permitted. No cases of employment under legal age were found in 7 States. These were Illinois, Kansas, Massachusetts, New York, and Wisconsin, in which the legal age was 14, and Georgia and South Carolina, in which the legal age was 12. The number of children found employed under legal age, and their distribution by State and by age, are shown in the following table:

EXACT AGES OF CHILDREN EMPLOYED UNDER LEGAL AGE, BY STATES

State	Legal age.	Number of children employed under legal age	Distribution by exact age (in years) of children under legal age.					
			9	10	11	12	13	Not reported
New Jersey	14	14	...	...	1	2	11	...
Pennsylvania	14	85	...	4	5	11	21	...
Ohio	14	7	...	...	...	1	6	...
Indiana	14	15	...	...	4	6	11	4
Tennessee and Missouri	14	4	...	...	...	1	1	...
West Virginia	12	14	1	5	8	...	...	...
Maryland	12	2	1	1	...	...	...	...
Virginia	12	6	...	4	2	...	...	...

[1] Vol. III, Glass Industry p. 215

EMPLOYMENT WITHOUT REQUIRED CERTIFICATES.

The employment of children without proper certificates was illegal in seven States—New York, Pennsylvania, Ohio, Indiana, Illinois, Missouri, and Wisconsin. In these a total of 778 children were found working without proper certificates, forming 52.7 per cent of the 1,477 as to whom special investigation on this point was made. In addition 85 children were found working under certificates issued before they were of legal age.[1]

EMPLOYMENT AT NIGHT.

The employment of children at night was prohibited in New York, Ohio, Illinois, Wisconsin, and Missouri. This law seemed pretty well obeyed except in Ohio, where it was under attack and where meanwhile it was almost a dead letter. The occasional employment of boys more hours than the law permitted when there was any restriction of this kind seemed common, and under the prevailing system of factory inspection almost impossible of prevention. The difficulty of securing a sufficient supply of boy labor is the cause for most of these violations.

SUMMARY OF EMPLOYMENT OF BOYS IN FURNACE ROOM.

The work of boys under 16 has been of great importance in the furnace room, but this importance appears to be decreasing. To a very limited extent women and girls have been used as a substitute for boys, but their use in this capacity is generally disapproved and seems unlikely to increase. Older boys and adult males have been substituted to a considerable extent.

The work done by boys under 16 seldom involves severe muscular exertion, but is done in an intense heat and frequently demands rapid movement and close attention. It has in itself no educative value. The boy has a limited chance of becoming an apprentice,[2] in which case he acquires a skilled trade. Failing that, he has no prospect of ever being anything in the glass industry but an unskilled worker.

The regular hours are not long but lend themselves readily to a severe form of overwork, the double shift. Night work is common. The physical effect of the work is almost inevitably bad, and since little discipline of any kind is enforced in a glass factory the moral influence is usually far from desirable. Wages vary widely, but on the whole are good. The growing restrictions on child labor have

[1] Eighteen of these were in New Jersey, a State in which the employer was not legally obliged to have certificates on file.

[2] This chance is practically nil if he is either a Negro or a foreigner, the custom of the glass blowers being to take only native-born white boys as apprentices.

rendered the employment of young boys less profitable, and few employers now insist that they are essential to the conduct of the industry. Many admit that their opposition to such legislation has been a mistake.

As one manufacturer said, "The money I have spent to help prevent the passage of child-labor laws is more than double the difference between boy labor and man labor in my factory, and I am done with it."[1]

HEALTH CONDITIONS OF THE FURNACE ROOM AS INDICATED BY CAUSES OF DEATH OF GLASS BLOWERS.

Inasmuch as the general working environment of boys in the furnace room is essentially the same as that of the blowers, and inasmuch as all boys do blowing from time to time, and a considerable number ultimately become blowers, the health conditions of the blowers themselves become important, especially as definite statistics for no other class of glass-factory employees can be shown. As will be seen, the prevalence of tuberculosis among the blowers very directly and very seriously concerns the boys.

In order to throw as much light as possible on the question of health conditions in the glass industry, statistics were secured from the death records of the Glass-Bottle Blowers' Association covering a period of 17 years, from 1892 to 1908, inclusive. The total number of deaths during this period was 898. Of these the records showed the cause of all deaths and the age at death for 886 persons.

The following table gives the age at death from all causes and from certain specific causes which are of importance, and the percentage of deaths from such causes compared with the percentage of deaths from like causes of males occupied in manufacturing and mechanical industries:

AVERAGE AGE OF GLASS-BOTTLE BLOWERS AT DEATH AND PER CENT OF DEATHS DUE TO EACH SPECIFIED DISEASE.

Disease.	Bottle blowers.		Males in manufacturing and mechanical industries.
	Average age at death.	Per cent of total deaths.	Per cent of total deaths.
Typhoid fever	37.1	3.01	2.59
Tuberculosis of the lungs	34.8	32.09	18.50
Organic heart disease	44.2	9.25	10.51
Pneumonia	40.0	7.69	9.98
Disease of urinary system	49.3	6.13	9.17
Total	41.4	100.00	

[1] Vol. III, Glass Industry, p. 229.

It is thus seen that the average age at death for all bottle blowers is 41.4 years; that of those dying from tuberculosis of the lungs the average age at death is 34.8 years; that these form 32 per cent of all deaths, whereas in mechanical and manufacturing industries the per cent of deaths from this cause is 18.5.

What this table further shows is that in no disease except tuberculosis is the glass blowers' percentage of deaths greatly in excess of that discovered among workingmen in general. Only in typhoid fever is the rate even as high, and this is so entirely a local question, probably due largely to the impurity of drinking-water supply, that the glass industry could superinduce it only in so far as the occupation causes excessive drinking of water in localities where the water was impure. At any rate the excess percentage, or difference in percentage, 3.01 as against 2.59, is not sufficient to indicate a tendency, even if typhoid fever could ever be considered a disease attributable to occupation.

This table shows that glass blowers are not more subject to pneumonia than are other workingmen, notwithstanding the extreme changes of temperature, and the reason for this may perhaps be in the trade custom of wearing wool shirts the year round, thus protecting themselves from the chill that would otherwise follow sudden passage from hot zones to cold belts in the furnace room.[1] * * *

One of the causes of the large proportion of deaths from tuberculosis is the practical absence of any sanitary or hygienic regulation of the use of blowpipes. In only one plant was found a full set of pipes for each blower, who was required to use only his own set. Everywhere else blowers' pipes passed from mouth to mouth without having been disinfected or even cleaned. Not only does the mouthpiece here become an ideal means of distributing the disease among the blowers and the boys, but the practice of blowing saliva into and through the pipe to get the additional expansive force of steam, in addition to the breath in blowing larger ware, makes the whole canal through the pipe a perpetual culture bed for the bacilli. In case of large window-glass cylinders or very large carboys a little water is poured down the blowpipe to make steam, but ordinarily saliva is used. In this connection, too, it must be borne in mind that in some cases "blow-up boys" are used; that is, a boy, generally the clean-off, is paid a small amount extra by the blower or the firm to start the blowing. That is to say, he blows into the pipe while the glass gather is still on the marver or as soon as it is taken off, and thus forms a hollow bulb on the end of the blowpipe, which saves the breath and lung power of the blower very materially.

Again, the practice of "daubing" brings all the boys in the shop or in the blow room into direct contact with these undisinfected blowpipes. "Daubing" is the name given to that general custom and practice by which a boy has a right to gather a "gob" and attempt to blow a bottle during tempos and meal hours. It is the beginning of his apprenticeship to the trade of a blower. Custom gives each boy the right to four "daubs" a day. The boys are usually very jealous of this right and will and often do go on strike for its en-

[1] Vol. III, Glass Industry, pp. 248, 249.

forcement. In order to get his "daub" the boy picks up any blowpipe and uses it.[1]

This practice among the boys of using the blowpipes of the blowers from time to time involves another serious danger, the danger of the spread of venereal diseases. Dr. E. R. Hayhurst in his study of "Industrial health hazards and occupational diseases in Ohio" says: "The innocent spread of venereal diseases, particularly syphilis, through the common mouthing of the blowpipe was illustrated in one place, where a physician cited a chancre of the lip which had been followed by other cases of syphilis" (p. 260). This danger has also been the subject of discussion by other investigators of the subject.[2]

EMPLOYMENT OF WOMEN AND GIRLS IN THE GLASS INDUSTRY.

The first definite mention of the employment of women in glass making is in the report of manufacture for 1832 by the Secretary of the Treasury, in which mention is made of 16 women employed in two factories in Massachusetts. According to the census figures in 1850 women formed 1.7 per cent of the total wage earners in the industry; by 1890 this proportion had risen to 4.2 per cent, in 1900 it was 6.7 per cent, and in 1905 it had decreased to 5.4 per cent. The present investigation, made in 1908, seemed to show that this decrease was only temporary. Of the 54,885 employees of the glass factories investigated, 3,971, or 7.2 per cent, were females aged 16 or over, and 582, or 1.1 per cent, were girls under 16. (The women who were employed as substitutes for boys in the furnace room are not included in this calculation.) The proportion of women depends largely on the kind of ware manufactured. Thus, in the manufacture of beer bottles, in which 7,336 employees were found in the factories visited, only 1.2 per cent were females, while in the manufacture of table ware (total employees, 9,445) the proportion of female workers was 18.7 per cent.

Racially the distribution of the women in the glass factory appears to be about the same as their distribution in the community in which the factory is located. Of the total group of female workers 52.2 per cent were native born of native parents, 34.5 per cent native born of foreign parents, and 13.3 per cent foreign born. The age distribution of 3,255 female employees from whom information on this point was obtained is shown in the table following.

[1] Vol. III, Glass Industry, pp. 242, 243.
[2] Idem, p. 266.

NUMBER AND PER CENT OF FEMALES EMPLOYED IN GLASS FACTORIES INVESTIGATED, BY AGES.

[Female furnace-room employees are not included in this table.]

Age.	Females.		Age.	Females.	
	Number.	Per cent.		Number.	Per cent.
12 years	3	0.1	23 years	77	2.4
13 years	12	.4	24 years	66	2.0
14 years	161	4.9	25 to 29 years	135	4.1
15 years	305	9.4	30 to 34 years	62	1.9
16 years	523	16.1	35 to 44 years	69	2.1
17 years	450	13.8	45 years and over	25	.8
18 years	411	12.6	Others, reported as 21 years and over	249	7.7
19 years	260	8.0			
20 years	203	6.2			
21 years	146	4.5	Total	3,255	100.0
22 years	98	3.0			

It will be noticed that 16 is the age of greatest numerical density; that half the total number are found in the age group 16 to 20; that after 18 years has been reached the numbers decrease rapidly; and that less than one-third (28.5 per cent) are over 20. Of those aged 18 years and over, 86.9 per cent were single while 13.1 per cent were or had been married.

As before mentioned, the employment of women in furnace rooms is very exceptional, their work usually being confined to the leer room and the finishing department. From the standpoint of number, the finishing department is the more important, there being approximately three times as many females employed in it as in the leer room. The kind of work done and the conditions under which it is performed differ so widely in these two departments that they must be considered separately.

WORK OF WOMEN IN THE LEER ROOM.

When an article has been molded in the furnace room it is taken by the carrying-in boy to the annealing leer, a long tunnel-like structure, through which it passes on a series of moving pans, emerging, cooled and annealed, into what is practically another division of the building—the leer room. Sometimes this is really a separate room; more often it is merely a portion of the main room, but so partitioned off from the blow room proper as to constitute a distinct working section. Ordinarily it, like the blow room or furnace room, is of such open construction as to afford very little protection against the cold.

In tableware and shade factories the use of the leer room is almost entirely confined to the taking of the ware off the leer, such ware being sent at once to the finishing room. In bottle and jar factories where very little finishing is required the leer room is used also for

such finishing operations as sorting and packing, putting caps on jars, tying glass stoppers to their bottles, etc.

TAKING OFF THE LEER.

The most important operation in this room is that known as "taking off the leer." This consists of removing the cooled ware from the leer, examining it for defects, throwing aside the imperfect pieces, and placing the perfect ones in boxes or crates. The pan from which the ware is to be taken rests immediately in front of the worker. Sometimes it is waist high and the ware can be removed without stooping, but more often it is so low that constant bending is necessary. In half the factories in which women were found at this work the crates or boxes in which the ware was to be put were simply placed upon the floor, and as a consequence it was necessary to stoop constantly. In others the crates were placed on stands, an arrangement which renders the work at once less fatiguing and less likely to prove injurious. A man was always assigned to carry away the crates when they were full, but since he was often slow in coming when needed, and since the women, being paid a piece rate, were anxious to avoid delay, they not infrequently carried away the full crates, which involved very heavy lifting. Apart from this the work has many objectionable features.

The work of taking off the leer is almost always a very dirty occupation. In two factories the gas combustion within the leer was good, and little or no smoke or soot escaped into the leer room, and the takers-off were able to keep themselves reasonably clean. In most factories, however, the persons and clothes of the women soon become very soiled. In one place the smoke was visibly oozing from the leer opening, and the taker-off was grimy with soot. This latter case was exceptional, but almost always the rear or leer room end of the leer is sufficiently dirty to render care of the person impossible. Moreover, in only three of the 14 establishments in which women take off the leer are wash rooms or any washing facilities provided. One woman, employed in a factory which provided no washing facilities whatever, complained that she had to walk home each evening because, on account of her uncleanly appearance, she was ashamed to ride on the street car.

The dirtiness of the work of taking off, combined with the necessity of a constant stooping posture and the general character of the place where the work is done tends to have a coarsening influence upon the women so employed. They work singly or in pairs, and very often in intimate association with a few men. That these conditions have a demoralizing tendency is shown by the fact that in two establishments it has been found necessary to post signs threatening instant dismissal to any man caught talking with the women takers-off. The work is usually regarded by the other women of the factory and by the community generally as more or less degrading, and as an occu-

pation for women it has possibly the lowest social standing of any in the glass industry.[1]

The employment of women at taking off the leer is not, and never has been, general in the industry. They were first employed in this way about twenty years ago. "Since then the practice has been tried in numerous places, and usually abandoned after a short trial. During the year of this investigation there were 15 factories employing women and girls at this work. The number so employed was 79, of whom 9 were under 16." In one factory they were employed by night as well as by day; elsewhere men only were employed for such work at night.

OTHER OCCUPATIONS.

The other occupations of the leer room require little description. Sorting and packing involves only what is implied in the name, and may be a very light or a heavy occupation, according to the size of the ware handled. In two factories the packers had to lift and carry trays or crates of the ware weighing 50 to 80 pounds; elsewhere men were assigned for this work, but the women often did it themselves to avoid the delay of waiting for the men.

The work of capping fruit jars is one of absolute simplicity, requiring no skill or training whatever. The same may be said of tying on stoppers. Chipping and filing, which consists of smoothing off the necks of cheap bottles or jars, requires a little more skill. The worker holds the article in one hand and with a tool in the other breaks away particles of the excess glass until the neck is reduced to a considerable degree of smoothness. When greater smoothness is desired the neck may be ground, but with many of the cheaper articles the chipping or filing is sufficient. The most unpleasant feature of the work is that the strokes of the metal on the glass necessarily cause particles of glass to fly in all directions and flesh cuts, particularly on the hands, are frequent, especially with the younger or more careless girls. No permanent injuries, however, were reported.

In nearly all of these leer-room occupations the work was done standing. There is a general belief that this leads to more rapid work. In some factories seats were not provided; in others workers at some of the occupations were forbidden to sit.

WORK OF WOMEN IN THE FINISHING ROOM.

The term "finishing room" is used to denote "that division, section, or department of a glass factory in which the finer varieties of glassware receive their final decoration by grinding, fluting, beveling, etching, color applications, etc." It may or may not be in the same

[1] Vol. III, Glass Industry, pp. 300, 301.

building as the furnace and leer rooms, but in any case it is more carefully finished, the more delicate work of the finishing room requiring more complete and permanent housing than does the rougher, heavier work of the furnace and leer rooms. Sixty-six finishing departments were visited, in which normally about 2,919 women of 16 years and over were employed, and 440 girls under 16. "Males over 16 were employed in some degree in all of these places, but boys under 16 were not frequent, the number being but 81."

A great variety of occupations are carried on in the finishing room, no less than 150 in which women are employed being found in the present investigation. "Many of these were of very small membership; a number occurred only in a single factory; several had no well-defined names." Some of the most important of these occupations were cutting off, grinding, glazing, sand blasting, designing in wax and etching, acid etching, flute cutting, color decoration, and cut-glass making.

Cutting off is the removal of the rough upper edge of a tumbler or other article. In flame cutting, the method now generally used, the cutter draws a scratch with a diamond point upon the surface of the glass; the article is then clasped in a revolving holder, and as it turns a flame is directed upon it at the line of the scratch. Almost immediately a fracture commences at the scratch and continues around the object in an even line. The work is not difficult and requires no particular skill. It is usually done standing, but this seems a matter of custom rather than of necessity. Women predominate in the occupation, but men are found at it.

The edge of tumblers, lamp shades, etc., are ground to smooth them off. This may be done either by hand grinding or chuck grinding. In hand grinding the worker stands before a large grindstone, revolving horizontally, and presses the article, edge downward, upon the moving surface. The chuck-grinding machine consists of a series of three or four small circular stone wheels, each with an attached holder or chuck. Each chuck is arranged to hold a tumbler in such a position that when the weight which moves the chuck is released the open rough edge of the tumbler is brought into contact with the grinding surface of the stone. The work of the operator is to place the tumblers in the chucks, manipulate the weights and controlling levers, and when the ware is sufficiently ground remove the tumbler and repeat the operation with another. Grinding is a rather dirty operation and almost necessarily involves continuous standing, but it is not heavy or difficult work.

Glazing consists of exposing the sharp edge left by the last operation to a flame which slightly melts and rounds the edge. The ware is placed in some kind of carrier, and as it passes along in this

it is exposed to the flame. At the end of its transit the ware is finished and the operator removes it.

DECORATING PROCESSES.

At this point the article is ready for decoration. For this four main processes are in use: Sand blasting, acid etching, cutting by stone or metal wheel, and painting and enameling in color.

Sand blasting.

Sand blasting is apt to be at once disagreeable and very harmful to the operator. Ordinarily the apparatus consists of a box with a small opening at the top. Pipes carrying sand under compressed air or steam pressure lead into this box. When the pressure is on the only escape is through the opening at the top, and through this the sand pours in a very forcible blast. The article to be decorated is held in this blast, and the escaping sand chips away minute particles of glass, breaking the surface and producing a milky opaque appearance or frosted effect. If the frosting is not to cover the whole surface, the article is inclosed in a metallic plate in which a design has been cut. It is then exposed to the blast and the design is frosted on its surface.

The sand, forced through the escape under a pressure of from 25 to 100 pounds, naturally tends to rebound from the glass and scatter in every direction. The more recent sand-blast machines have proper hoods or exhausts to capture this rebounding sand and carry it safely off. A few, indeed, are semiautomatic, the operator placing the article in an inclosed box and the blasting being done entirely out of view. These types may be harmless, but they are few. Most of the machines in use were of the open type, and the majority had either no exhausts or very poor ones, so that the escaping sand and glass particles passed freely into the room and filled the air. The operator standing before the machine received the full force of this dust stream in her face. Nearly all the women employed at the work complained that the dust caused painful irritation of the eyes and throat. This is the most objectionable feature of the work, but a secondary one is that the work is ordinarily done standing. Neither of these conditions is necessitated by the work; the escape of dust can be entirely prevented, and by a little adjustment much, if not all, of the work can be done seated.

Acid etching.

Acid etching produces the same effect as sand blasting by means of the action of hydrofluoric acid upon glass. If the whole surface is to be frosted, the article is immersed in a bath of the acid; if a de-

sign is desired, the article is first covered with wax or paraffin, the design is cut into this covering, and the article then immersed in the acid. Another method is to stamp the design upon the glass by a stencil, covering all that is not to be eaten by the acid with an ink refractory to the action of acid. In either case the article after preparation is either immersed in a bath of hydrofluoric acid or exposed to its fumes until the design is eaten into the glass. When the articles are dipped the worker's hands are apt to suffer; when they are not dipped this difficulty is avoided, but the fumes of the acid constitute a dangerous feature in both kinds of the work. These fumes are extremely pungent and irritating to the throat and nose and affect the eyes painfully. It is entirely possible to arrange the apparatus by means of inclosed tanks, exhaust pipes, etc., so that the operator will not be exposed to the fumes at all, but such an arrangement was found in only one factory. Elsewhere the work was uniformly disagreeable and harmful.

Plate cutting and smoothing.

Two kinds of grinding are done by women, fluting ordinary ware—tumblers, for instance—and smoothing cut glassware. Fluting is done by holding an article against a revolving stone in such a way that only the desired portion of the lateral surface is ground. In some cases the article is held in the hand; in others a machine is used for holding it in place. Women are largely employed in this work, especially in the machine fluting, which they practically monopolize. Hand grinding may be done seated, but in machine grinding the operator is usually on her feet. The use of a grindstone moistened with sand or emery and water results in the spattering of some dirt upon the operator, and in machine grinding there is much physical strain owing to the rapidity of the work. Smoothing consists of grinding cut glass, after the cutting has been done, to remove the roughness of the incisions. It is light work and has no particularly unpleasant features.

Color decoration.

Painting and enameling are in the main light work. In painting the paint is usually applied directly to the surface, but when gold paint is used the glass must first be roughened to receive it. The old way of doing this, known as mudding, consisted of covering the article with mud and then heating it by passing it through a leer. This was found still in use in three establishments, the work being done by women.

Such work is very disagreeable. The ware must be dipped in a caldron of the heavy mud or the mud must be plastered on with brushes and later, when it has been hardened in the leer, the caked

mud must be rubbed or washed off. It is hard, dirty, unfeminine work.[1]

In the other establishments different methods of preparing the glass were used, men alone being employed for the work.

The painting itself requires no description. The most noticeable feature is the speed required. "The pay is by piece, and the rate is so low that a worker must attain an almost incredible speed in order to make $1 to $1.50 per day." As an illustration of the speed required the decoration of a standard 4½-inch nappy is considered, in which gold paint is to be applied, covering approximately 10½ square inches.

The rounded, hollow shape of the article requires that its position must be constantly changed while being decorated. The piece rate for doing this work is such that in order to earn $8.85 per week a woman must complete on the average one article per minute for the full 58 hours per week.[2]

Enameling is usually done by stamping a design upon glass with a quick-drying oil, and then dusting or sprinkling enamel powder over the glass, the powder adhering only to the parts which are sticky with oil. Afterwards the articles are sprayed with an oil or turpentine preparation and left to dry, after which the surplus powder is wiped off, and, if the ware is of fine quality, the enamel is rendered more durable by firing. Women are commonly used for stamping the design upon the glass, for sprinkling the powder upon the oil, and for removing the surplus powder. This is all light work, and the operators can readily sit at all times.

The disagreeable feature, and one that in some factories becomes a positive evil, rises from the use of the enameling compounds in the form of either powders or sprays in such manner as to permit the air to become filled with dust. These enameling compounds contain various ingredients, but lead and arsenic are common to nearly all. This being the case, exhausts seem indispensable to the work.[3]

In addition to these lines of work, women are numerously employed in sorting, washing, wiping, and packing glassware, and in a number of miscellaneous operations.

WORKING CONDITIONS.

These have already been dwelt upon to some extent in the description of the work done. The leer rooms almost without exception involved undue exposure to weather, but had abundant ventilation. Of the 66 finishing departments visited 20 were housed in a thoroughly satisfactory manner, 10 were very bad—"gloomy and dirty, badly heated, and insufficiently lighted"—while the remaining 36 fell somewhere between these extremes.

[1] Vol. III, Glass Industry, p. 327. [2] Idem, p. 327. [3] Idem, p. 328.

From the standpoint of the employees the worst economic feature of the ordinary finishing room is probably the presence of broken glass upon the floor. The establishments where this condition does not prevail are very few. Apart from the danger of more or less serious cuts and injuries arising from this loose glass, the destruction of shoes is a very serious matter with employees. In securing family schedules from mothers of girls in glass factories an almost universal complaint was that the additional expense for shoes more than offset whatever favorable conditions might surround the work.[1]

Overcrowding, poor ventilation, and insufficient light were rare, though some cases were found. Provisions for cleanliness were frequently inadequate, though much needed.

For all female workers the provision of proper washing facilities is at least highly desirable, while for many such workers proper conveniences for washing and also for dressing are imperative as matters of decency. Nevertheless, of the 116 factories investigated in which women were employed, 84 (72.4 per cent) were absolutely unequipped with dressing rooms, 85 (73.3 per cent) were unequipped with wash rooms and 108 were unequipped with rest rooms. Women employed in such factories had for washing purposes at best only the common factory hydrants, and such dressing as they could decently do had to be done in the publicity of rooms in which men were employed or to which men had frequent access. That these factories which were unequipped with conveniences were not those in which the work was especially clean is shown by the fact that nearly one-half of such factories had women employed in leer-room occupations, normally the most dirty of all women's work.[2]

Of 4,632 women and girls for whom these facts were learned only 32.1 per cent had the use of dressing rooms and 31.1 per cent the use of wash rooms. Lunch rooms were uncommon, only five factories providing them for the female employees, while none made such provision for male workers.[3] Thirty-six of the 116 factories provided sufficient toilet accommodations for the women employees, these accommodations, moreover, being conveniently located with sufficient privacy of approach, and kept in excellent condition. In the other 80 factories the accommodations provided were defective in one or all of these points.

Serious accidents appeared to be rare; cuts from broken glass were the most frequent form of injury.

HOURS OF LABOR, NIGHT WORK, AND OVERTIME.

The information as to hours was taken from the pay rolls of the establishments visited for a selected pay-roll period, which was, as

[1] Vol. III, Glass Industry, p. 340.

[2] Idem, p. 344.

[3] In one factory outside parties were allowed to maintain a restaurant for men and women alike.

a rule, the one just prior to the investigation by the agent of the bureau in 1907 or 1908. Facts were obtained concerning 3,971 females 16 years of age and over, 582 girls under 16, and 113 boys under 16, all employed outside of the furnace rooms in 116 factories. The following table shows the distribution of these persons according to the length of their working week:

HOURS OF LABOR OF WOMEN AND CHILDREN IN THE FINISHING DEPARTMENT.

Hours per week.	Females 16 years and over.			Females under 16 years.			Males under 16 years.		
	Number working specified hours.	Per cent working—		Number working specified hours.	Per cent working—		Number working specified hours.	Per cent working—	
		Specified hours.	Specified hours or less.		Specified hours.	Specified hours or less.		Specified hours.	Specified hours or less.
44				5	0.9	0.9			
45	16	0.4	0.4				1	0.9	0.9
46							1	.9	1.8
47	2	[1]	.5	2	.3	1.2			
48	12	.3	.8	22	3.8	5.0	6	5.3	7.1
49				1	.2	5.2			
50	40	1.0	1.8	10	1.7	6.9	15	13.3	20.4
51	56	1.4	3.2						
52	20	.5	3.7	5	.9	7.7			
53	182	4.6	8.3	16	2.7	10.5	5	4.4	24.8
54	115	2.9	11.2	6	1.0	11.5			
55	591	14.9	26.1	131	22.5	34.0	5	4.4	29.2
56	[2] 261	6.6	32.7	[2] 21	3.6	37.6	1	.9	30.1
57	208	5.3	37.9	26	4.5	42.1	14	12.4	42.5
58	1,492	37.7	75.6	242	41.6	83.7	58	51.3	93.8
59	746	18.8	94.4	45	7.7	91.4	5	4.4	98.2
60	220	5.6	100.0	50	8.6	100.0	2	1.8	100.0
Total.	3,961	100.0	.....	582	100.0	.....	113	100.0	.....

[1] Less than one-tenth of 1 per cent.
[2] Including one factory in which the hours per week were 58 for one-half of the year and 55 for the other, an average of 56½ hours per week.

Omitting the boys under 16 as being too few in number for the facts concerning them to have any significance, it appears that very few worked as much as 60 hours a week, and none worked over these hours. The great majority, 83 per cent of the women and 80 per cent of the girls, were concentrated in the group 55 to 59 hours, inclusive, the point of greatest density being clearly marked at 58 hours. Below the 55-hour limit there were approximately 11 per cent of both women and girls. This lower group was widely scattered, more than 100 individuals having a working week as short as 50 hours, and 21 as short a week as 45 hours. In general, the shorter working week for females occurred in the leer-room occupations of taking off the leer, sorting, and packing, while those persons whose week was 55 hours or more were engaged in the finishing occupations proper. A short working day on Saturday is practically universal.

Night work among women and girls.

Night work in the sense of working on a night shift is very unusual among female employees. No girls under 16 and only 56[1] of those over this age were so employed. Massachusetts, New York, and Indiana absolutely prohibit night work for women, and Ohio forbids it for females under 18. In other States the custom of the industry is against employing women at night, and manufacturers in general strongly disapprove of the practice. Only 10 women were found employed on night shifts outside of the furnace room. Six of these worked at selecting ware in an Ohio factory, and four in Pennsylvania worked at taking off the leer.

Overtime.

Double-shift work is practically unknown among women in the leer and finishing rooms, but work carried on after the formal closing time was not unusual. In the leer room such work is frequent, but irregular; in the finishing room it is apt to be seasonal. A special inquiry was made upon this point among 1,057 women and girls employed in 62 establishments. Of these, 331, from 39 establishments, have worked overtime on 4,361 separate occasions, an average of 13 occasions for each person. Thirty-eight had worked overtime on more than 25 but less than 50 days, 6 on 50 but less than 100 days, and 4 on 100 or more days. The amount of overtime required varied from half an hour to seven hours per day; the most common amount was from two to three hours, reported in 135 cases, and next to this from three to four hours, reported by 106 workers. Pay-roll records were found of weekly hours ranging up to 76.

EARNINGS OF WOMEN AND GIRLS.

Earnings and rates of wages were obtained for 69.9 per cent of the women and 82.6 per cent of the girls under 16 normally employed in the leer and finishing rooms of the 116 factories in which they were found working in these departments. These percentages seem sufficiently large to be taken as illustrative of the whole.

As in the case of the boys in the furnace room, there was a wide difference between the full-time weekly earnings and the actual weekly earnings. The following table shows the extent of this difference:

[1] Including the Negro women whose work in the furnace room has already been described.

FULL-TIME AND ACTUAL WEEKLY EARNINGS OF WOMEN AND GIRLS IN FINISHING DEPARTMENT COMPARED.

Classified weekly earnings.	Females 16 years and over.				Females under 16 years.			
	Full-time weekly earnings.		Actual weekly earnings.		Full-time weekly earnings.		Actual weekly earnings.	
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
Under $2	.....	.....	120	4.3	.....	.....	51	10.6
$2 to $2.99	1	.....	218	7.9	1	0.2	81	16.8
$3 to $3.99	228	8.2	462	16.7	184	38.3	146	30.4
$4 to $4.99	852	30.7	767	27.6	205	42.6	137	28.5
$5 to $5.99	693	25.0	545	19.6	57	11.8	42	8.7
$6 to $6.99	559	20.2	346	12.5	23	4.8	15	3.1
$7 to $7.99	196	7.1	144	5.2	7	1.5	6	1.3
$8 to $8.99	96	3.5	66	2.4	2	.4	1	.2
$9 to $9.99	76	2.7	54	1.9	2	.4	2	.4
$10 to $11.99	42	1.5	32	1.2	.....	.....	.....	.....
$12 to $13.99	20	.7	14	.5	.....	.....	.....	.....
$14 and over	11	.4	6	.2	.....	.....	.....	.....
Total	2,774	100.0	2,774	100.0	481	100.0	481	100.0

From this it appears that while among the women aged 16 and over only 8.2 per cent were working for nominal wages of less than $4 a week, 28.9 per cent earned under that amount. Not quite two-thirds (63.9 per cent) had rates under $6 a week, but three-fourths (76.1 per cent) earned less than this. Among the girls under 16 the differences are equally great.

Local variations in earnings.

The earnings of women in the same occupation varied widely according to location. The only reasons suggested for this are the immobility of female labor and the fact that glass factories as a rule are located either in the country or in small communities where there is not much demand for female labor. Some examples of the extent of this variation are given in the following table:

COMPARATIVE AVERAGE WAGES OF WOMEN IN 4 SELECTED OCCUPATIONS IN 13 SELECTED ESTABLISHMENTS IN THE GLASS INDUSTRY.

State.	Total.			Selecting.			Wrapping.			Washing.			Grinding (hand).		
	Establishment number.[1]	Number of persons.	Average wage per hour.	Establishment number.	Number of persons.	Average wage per hour.	Establishment number.	Number of persons.	Average wage per hour.	Establishment number.	Number of persons.	Average wage per hour.	Establishment number.	Number of persons.	Average wage per hour.
			Cts.			Cts.			Cts.			Cts.			Cts.
Pa.	1	26	5.9	1	16	5.7	2	6	5.7	1	10	5.2	3	6	6.2
Ohio	2	16	6.3	5	6	7.6	4	10	6.4	2	6	5.4	5	3	6.7
Pa.	3	28	6.7	4	9	7.7	3	9	6.6	3	6	6.0	7	27	7.9
W. Va.	4	24	6.9	9	12	7.7	5	9	7.1	4	5	6.5	10	15	9.7
Pa.	5	18	7.2	3	7	8.0	10	4	7.2	6	3	7.3	11	2	11.6
Ohio	6	23	8.1	6	20	8.2	7	24	7.5	12	6	7.5	8	15	12.4
Pa.	7	79	8.1	8	45	8.4	8	19	7.7	7	6	7.9	9	4	14.3
Ohio	8	79	9.0	2	4	8.7	11	4	8.7	11	3	9.4	12	4	15.0
Do	9	34	9.3	7	22	9.0	9	6	8.9	9	12	9.6	6	.....	.....
Do	10	28	9.5	12	2	9.3	13	3	12.2	13	3	10.0	2	.....	.....
W. Va.	11	12	9.7	11	3	10.0	12	6	12.9	5	.....	.....	13	.....	.....
Ohio	12	18	11.2	10	9	10.0	6	.....	.....	10	.....	.....	4	.....	.....
Do	13	29	11.9	13	23	12.1	1	.....	.....	8	.....	.....	1	.....	.....

[1] In the total division the establishments are given consecutive marginal numbers, these numbers being attached to the same factories in each of the occupational divisions.

As these four occupations are all of a relatively unskilled character it might fairly be supposed that there would be no great variation in the rate of wages, yet the table shows that for three of them the average wage paid by the establishments at one extreme is at least double that paid by the establishment at the other extreme, while in the fourth occupation—washing—the variation is little short of 100 per cent. In grinding the variation is particularly great, the difference between 6.2 cents an hour and 15 cents an hour being, on a 58-hour-per-week basis, the difference between $3.60 and $8.70 a week. These examples are perhaps extreme, but there seems abundant ground for the statement that "among women glassworkers there is no such a thing as a level of occupational wage, even within a very limited territory."

Age and earnings.

This variation renders it difficult to make general statements concerning wages and earnings, but even with this drawback the connection between age and earnings is very clearly shown by the following table:

NUMBER OF FEMALE GLASSWORKERS RECEIVING EACH CLASSIFIED FULL-TIME WEEKLY EARNINGS AND PER CENT RECEIVING UNDER CERTAIN SPECIFIED AMOUNTS.

Age.	Total number of employees.	Number receiving—						Per cent receiving specified amounts.					
		$3 to $3.99	$4 to $4.99	$5 to $5.99	$6 to $7.99	$8 to $9.99	$10 and over.	Under $4	Under $5	Under $6	Under $8	Under $10	$10 and over.
12 years	3	3	.....	.....	.....	.....	.....	100.0	.....	.....	.....	.....	.....
13 years	12	3	7	2	.....	.....	.....	25.0	83.3	100.0	.....	.....	.....
14 years	161	[1] 80	61	13	7	.....	.....	49.7	87.6	95.7	100.0	.....	.....
15 years	305	99	137	42	23	4	.....	32.5	77.4	91.1	98.7	100.0	.....
16 years	523	97	220	120	73	9	4	18.5	60.6	83.6	97.5	99.2	0.8
17 years	450	47	187	121	62	10	3	10.4	52.0	78.9	97.1	99.3	.7
18 years	411	[2] 31	127	119	114	16	4	7.5	38.4	67.4	95.1	99.0	1.0
19 years	260	9	74	71	80	18	8	3.5	31.9	59.2	90.0	96.9	3.1
20 years	203	7	42	61	71	18	4	3.4	24.1	54.2	89.2	98.0	2.0
21 years	146	11	28	32	61	8	6	7.5	26.7	48.6	90.4	95.9	4.1
22 years	98	4	25	27	30	8	4	4.1	29.6	57.1	87.8	95.9	4.1
23 years	77	1	19	19	28	7	3	1.3	26.0	50.6	87.0	96.1	3.9
24 years	66	2	12	12	27	10	3	3.0	21.2	39.4	90.3	95.5	4.5
25 to 29 years	135	4	31	19	42	23	16	3.0	25.9	40.0	71.1	88.1	11.9
30 to 34 years	62	3	17	12	23	4	3	4.8	32.3	51.6	88.7	95.2	4.8
35 to 44 years	69	2	22	12	23	7	3	2.9	34.8	52.2	85.5	95.7	4.3
45 years and over	25	.....	9	4	7	3	2	.....	36.0	52.0	80.0	92.0	8.0
Others reported as 21 years and over	249	11	39	64	94	31	10	4.4	20.1	45.8	82.5	96.0	4.0
Total	3,255	[3] 414	1,057	750	785	176	73	12.7	45.2	68.2	92.4	97.8	2.2

[1] Including 1 receiving under $3.
[2] Including 2 receiving under $3.
[3] Including 3 receiving under $3.

NUMBER OF FEMALE GLASSWORKERS RECEIVING EACH CLASSIFIED FULL-TIME WEEKLY EARNINGS AND PER CENT RECEIVING AS MUCH AS OR MORE THAN CERTAIN SPECIFIED AMOUNTS.

Age.	Total number of employees.	Number receiving—						Per cent receiving as much as or more than—				
		$3 to $3.99	$4 to $4.99	$5 to $5.99	$6 to $7.99	$8 to $9.99	$10 and over.	$4	$5	$6	$8	$10
12 years	3	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
13 years	12	3	7	2	.....	.....	.....	75.0	16.7	.....	.....	.....
14 years	161	[1] 80	61	13	7	.....	.....	50.3	12.4	4.3	.....	.....
15 years	305	99	137	42	23	4	.....	67.5	22.6	8.9	1.3	.....
16 years	523	97	220	120	73	9	4	81.5	39.4	16.4	2.5	0.8
17 years	450	47	187	121	82	10	3	89.6	48.0	21.1	2.9	.7
18 years	411	[2] 31	127	119	114	16	4	92.5	61.6	32.6	4.9	1.0
19 years	260	9	74	71	80	18	8	96.6	68.1	48.0	10.0	3.1
20 years	203	7	42	61	71	18	4	96.6	75.9	45.3	10.8	2.0
21 years	146	11	28	32	61	8	6	92.5	73.3	51.4	9.6	4.1
22 years	98	4	25	27	30	8	4	95.9	70.4	42.9	12.2	4.1
23 years	77	1	19	19	28	7	3	98.7	74.0	49.4	13.0	3.9
24 years	66	2	12	12	27	10	3	97.0	78.8	60.6	19.8	4.5
25 to 29 years	135	4	31	19	42	23	16	97.0	74.1	60.0	28.9	11.9
30 to 34 years	62	3	17	12	23	4	3	95.2	67.7	48.4	11.3	4.8
35 to 44 years	69	2	22	12	23	7	3	97.1	65.2	47.8	14.5	4.3
45 years and over	25	.....	9	4	7	3	2	100.0	64.0	48.0	20.0	8.0
Others reported as 21 years and over	249	11	39	64	94	31	10	95.6	79.9	54.2	16.5	4.0
Total	3,255	[3] 414	1,057	750	785	176	73	87.3	54.8	31.8	7.6	2.2

[1] Including 1 receiving under $3.
[2] Including 2 receiving under $3.
[3] Including 3 receiving under $3.

This table shows a fairly steady increase in earnings as age increases, the climax being reached in the group aged 25 to 29, which has the highest level reached. Nevertheless not quite one-eighth of these earn as much as $10 a week. Taking the group as a whole, not quite one-third reach or pass $6 a week, while nearly one-half get less than $5.

Premiums and fines as means of securing good and preventing bad work were not very generally used.

Neither premiums nor fines are considered by most employers as being satisfactory means of encouraging speed, care, or regularity among the women of the finishing department. A large number of establishments reported that they had tried both these methods in the past, but had discarded them as being without successful effect. One employer concluded his opinion with the statement that "a damned good cussin' does a Slav girl more good than fining her." The comparative unimportance of fines and premiums among the women workers was indicated by the fact that the wage data gathered were influenced in almost no degree by the presence of such items.[1]

[1] Vol. III, Glass Industry, p. 422.

ILLEGAL EMPLOYMENT OF WOMEN AND GIRLS.

Very little of such employment was found. In six States at the time of this investigation there were no legal restrictions upon the employment of women. In four of the other States—Massachusetts, New York, Ohio, and Indiana—the employment of women at night was forbidden. Only one violation of this provision was found; in one Ohio establishment four women under 18 out of a total of 20 investigated were reported to have been employed in violation of the law later than 7 p. m. once or more during the preceding year. In seven States—Massachusetts, Connecticut, New York, Pennsylvania, Ohio, Indiana, and Virginia—a maximum legal day for women had been established, and also, except in the case of Virginia, a maximum legal week. In four of these States—Massachusetts, Connecticut, New York, and Virginia—no violations of these laws were reported; in the others 57 were reported as employed more hours per day than the law permitted and 130 as having a longer week than was legal.

RELATION OF THE WORK TO HEALTH.

INJURIOUS CONDITIONS AND SURROUNDINGS.

It was impossible in this investigation to have a physician's examination of the workers or to keep any number of workers under observation for a time sufficient to demonstrate the real effect of the work done. Consequently, only broad general statements can be made. On the whole there seemed nothing necessarily harmful about the work except in the two occupations, taking off the leer and sand blasting, which as performed in every factory visited were unquestionably bad for the health of women. As the work of the factories is commonly carried on, however, there are several conditions inimical to health and several occupations which are obviously injurious. Of the objectionable conditions the commonest are constant standing, the lifting of heavy weights, and wet floors.

Constant standing is the most general. Questions on this point were answered by 1,272 females, almost a third of the total normally employed in the factories visited. The table following shows the situation in regard to the use of seats among those questioned.

NUMBER OF FEMALES IN ESTABLISHMENTS INVESTIGATED STANDING CONSTANTLY, SITTING CONSTANTLY, AND SITTING PART OF THE TIME, BY OCCUPATIONS.

Occupations.	Total females concerned.	Number of females—			Establishments.	
		Standing constantly.	Sitting constantly.	Sitting part of time.	Total concerned.	Number in which all or some of females in specified occupations sat at least part of time.
Taking off leer	24	17	.....	7	8	2
Mold cleaning	18	3	14	1	10	9
Tying stoppers	17	1	8	8	5	5
Chipping and filing	24	7	16	1	8	8
Capping jars	18	11	4	3	5	2
Cutting off flame	67	55	8	4	12	4
Grinding, hand	114	110	3	1	16	3
Grinding, chuck	4	4	.....	.....	1	.....
Glazing (disk only)	22	13	9	.....	9	5
Flute cutting, hand	13	.....	13	.....	3	3
Flute cutting, machine	2	1	1	.....	1	1
Needle etching	20	17	.....	3	6	1
Sand blasting	12	10	1	1	5	2
Transferring	47	10	34	3	10	8
Decorating (color)	84	42	42	.....	13	9
Smoothing	12	.....	12	.....	2	2
Washing and wiping bottles	155	147	2	6	29	6
Sorting and selecting	220	180	23	17	36	16
Packing	62	53	1	8	18	3
Wrapping	111	96	6	9	23	7
Miscellaneous	160	93	44	23	34	21
Cap-machine tending	23	2	21	.....	3	2
Demijohn making	38	.....	38	.....	2	2
Vial making	5	.....	5	.....	1	1
Total	1,272	872	305	95	260	122
Per cent	.....	68.5	24.0	7.5	.....	46.9

It will be noticed that more than two-thirds stand continuously. This is not necessary, as, with the exception of chuck grinding, there is no occupation in which at least some of the women do not sit for part of the time. The constant standing is due to the fact that in most of the occupations listed a person works more rapidly standing than sitting. Foremen therefore usually prohibit women the use of seats for even a part of the time, and pieceworkers, for the sake of greater earnings, tend to shun seats even when provided. Nevertheless, it was almost always noted that pieceworkers used seats from time to time when they were unwell or unduly tired, and nearly all the employers who provided seats for time workers stated that occasional sitting increases efficiency in the long run.

The lifting and carrying by women of weights too heavy for anyone except a reasonably strong man is not a feature of many occupations, but it occurs at least occasionally in almost every factory. It is most frequently found in the occupations of taking off the leer and sorting and packing. In most cases men were assigned to do the heavy lifting connected with this work, but their delay or negligence led the women to do it themselves.

Wet floors were complained of frequently, the complaints being evidently well based. This condition affects chiefly those persons doing washing and wiping, this being the occupation in which water is most freely used, but it is by no means limited to this one work. It is an entirely unnecessary condition.

HARMFUL OCCUPATIONS.

The principal occupations which, as commonly performed, are undoubtedly harmful are taking off the leer, sand blasting, acid dipping, "dusting," and "spraying." In taking off the leer the constrained, stooping position in which most of the work is done and the frequent lifting of heavy weights are both objectionable. Sand blasting may be rendered perfectly safe by the use of closed hoods. In most of the factories visited, however, such hoods were not used, and in many the workers had little or no protection from the fine sand and glass particles. In the opinion of practically all medical experts the harmful effects of such dust are very serious. The unpleasant and harmful effects of the hydrofluoric acid used in acid etching have already been mentioned. As in the case of sand blasting, it is entirely possible to use devices which protect the worker completely from the acid fumes, but such devices were not generally found in the factories visited.

Dusting and spraying are both methods of applying color to glass articles as a decoration. In dusting a finely powdered paint is dusted on by hand, while in spraying a liquid paint is applied by means of an atomizer. In both cases, unless proper hoods and exhausts are used, the poisonous spray or dust may escape into the atmosphere and be directly inhaled by the workers. "The several factories engaged in this class of work differ greatly in their degree of provision of proper hoods and exhausts."

It is to be noted that these occupations do not require numerous workers. Excluding taking off the leer, others than the immediate workers may be affected by the harmful conditions described; but even so, not many are concerned. A rough approximation to the number affected will place it at about 150 out of a total of 4,632 females normally employed by all factories visited.

REASONS FOR ENTERING INDUSTRY.

No attempt was made to discover why these women were at work outside of their homes, but from 902 answers were secured to the query why they had entered the glass industry. The largest group, 167, said they could get better pay in this than in anything else open to them, and practically the same number, 166, said it was the only work open to them; 149 gave opportunity or convenience as their

reason; 77 came because other members of their family were already in it, and 93 because they had friends in it. The remainder, as might be expected, assigned a great variety of reasons, most of them amounting to a belief that the work was steadier or cleaner or better paid or easier than other work obtainable. On the whole, the women employed in these factories seemed less migratory than young workers frequently are. Of 708 whose industrial history was learned, 51 per cent had spent their whole working time in the glass industry.

SUMMARY OF EMPLOYMENT OF WOMEN AND GIRLS.

The employment of women in the leer room seemed to be quite generally considered objectionable, but concerning their work in the finishing room there is greater diversity of opinion. A considerable number of women and girls are so employed, mostly in work which does not involve much physical strain, which is not dangerous and which has no inherently harmful features. The wage level is low, but not strikingly so as compared with women's industries in general. Hours are usually moderate and night work is practically unknown. The reasons assigned by the women for entering the industry show that many of them consider it more desirable work at better pay than anything else open to them, but many of the employers and managers seemed very doubtful as to whether a glass factory was a fit place for a woman to work. Their doubt seemed largely based on a vague idea of unsuitability which they did not themselves try to define. Probably only time can show whether or not this feeling is justified.

EMPLOYMENT OF WOMEN AND GIRLS IN MAKING INCANDESCENT LAMPS.

The manufacture of incandescent lamps is an industry of recent development. Most of the processes, requiring accuracy, speed, and delicate manipulation, but little physical strength, are peculiarly suited to female workers, and as a consequence the industry is largely in their hands. Eight establishments were visited, employing normally 4,123 employees, of whom 78.2 per cent were females aged 16 and over and 1.7 per cent were girls under 16. In other words, practically four-fifths of all the workers were females.

The processes of manufacture are too numerous and complex to be described in a summary, but practically all have three common characteristics—the minuteness of the work, the extreme speed at which the operations are performed, and as a corollary of these two the necessity of maintaining a uniform position for long periods together.

The minuteness of the work done can be partially appreciated by inspecting an ordinary carbon or tungsten lamp, the filament of which

is not clearly visible unless the lamp is held close to the eyes and in a strong light. Yet these minute filaments must be prepared and mounted with absolute accuracy. Other operations, while not quite so trying as these, still demand the best sight and the closest attention, and all are rendered more exacting by the necessity for speed.

SPEED RATE.

Since the inception of this industry there has been a material reduction in the cost of the finished lamps. "This reduction has been possible only because of the increased rapidity with which the lamp could be produced and the consequent decrease in the cost of production." A part of this increased speed is due to the simplification of processes and the introduction of machines which relieve the operator of some part of the work; but by far the greater part is due to the increased speed of the operators. This increase in speed is the result of a carefully planned policy of the manufacturers, who have fostered it by highly developed methods.

These methods are four in number: First, the establishment of a minimum output below which the employees dare not fall, for fear of discharge. At the time of this investigation a tabulation of the output of all employees for a period of six weeks had just been completed in one establishment as a basis on which to establish minimum standards in all occupations. The fact that this system is not in general use, however, seems to indicate that it is of no great efficacy. Second, the payment of higher piece rates for increased production. In one of the factories, for example, the rates paid for "gem" mounting are as follows:

	Per 1,000.
Output under 900 per day	$1.03
Output 900 to 1,000 per day	1.07
Output 1,000 to 1,100 per day	1.12
Output 1,100 and over per day	1.17

In the case of the highest net output, 1,200, the difference to the operator between being paid at the lowest rate and highest is the difference between $1.24 and $1.40, or 16 cents per day—that is, more than 10 per cent of the total wages. Numerous instances of similar devices were encountered, and from the evidence of both managers and employees it is highly successful in securing greatly increased outputs. Third, a method very similar to that just cited, that of giving bonuses for all production above a certain standard. This method is likewise widely used. The fourth and last of these methods is perhaps the most interesting. When an entirely new process is introduced or there is some one occupation the output of which has fallen below normal, one of the most skilled and willing workers is made the "leader" of a group. She acts as a pacemaker, and is urged to her best efforts to increase both her own production and that of her group by being paid 5 per cent more than the average of the entire group. In such a case the use of bonuses or graded piece rates is ordinarily added in order to urge the individual work-

ers to their highest speed. After this system has been in vogue for a short time and the girls have become accustomed to working at their maximum efficiency the "leader" is removed, the bonuses discarded, and according to the testimony of many of the girls the piece rate is cut to such a point that the average wage level is as it was when the employees were producing much less. By this means the production is said in several cases to have been doubled within a short time.

Beside these specific methods of increasing the output in the different occupations the same results are secured by the regulation of piece rates. It is difficult to say just how far this policy is characteristic of the industry or to what degree it is practiced in the separate establishments, but the attitude is strikingly illustrated in the statement of a superintendent, who when asked how he was able to maintain rapid production without the use of premiums replied: "We keep the piece rate so low that they have to keep right at it in order to make a living."

These rapid and forced increases in the quantity of goods produced, however, necessarily react on the quality by increasing the proportion of imperfect products. To offset this tendency a set of fines is introduced as a penalty for imperfect work or breakage, bonuses are given for the largest percentage of perfect ware, or in some cases a combination of the two methods is used. In one of the largest establishments, for example, the average production and average breakage for each occupation as well as each individual are calculated every day. In those occupations in which the tendency to breakage or imperfect work is greatest, such as sealing-in, those having good production above the average of the occupation receive a bonus of one-third the full rates for all they have saved above the average. Those having a loss greater than the average are fined, but in a progressive ratio greater than the ratio of loss, and if employees fall constantly or very far below the average they are discharged. In other cases special fines are imposed, of the nature and amount of which it was found that the majority of the employees were ignorant. These fines at times become very onerous, and in at least one case there was a strike against them. In 1908 a system of fines was imposed on the "hub makers" in one of the establishments, which resulted in the girls losing an average of about 50 cents per week in fines, which represented approximately 7 per cent of their total wages. After standing the deductions for several weeks the girls refused to work until the fines were abolished, and succeeded after a little delay in gaining their point.

One of the establishments, that in which the general level of piece rates is highest, however, is peculiar in that its policy is not to force the speed of production, but, if anything, to restrict it. In pursuance of this policy the pieceworkers, who are required to remain in the factory until closing time, are given other work after they have exhausted their regular supply, and are paid for this extra work either on time rates or at 20 per cent less than the regular piece rates for the same class of work. This scheme has been adopted to prevent too fast work by supplying the additional work at a lower rate, as well as to prevent too slow work that some of the employees tend to do when they know that the supply is limited and that they might as

well "go slow" and make it last through full time. The reduction of 20 per cent in the rates for the additional work is justified on the ground that the girls, when given work for an hour or two to which they are unaccustomed, are not as efficient as the regular workers and waste a great deal of material.[1]

MAINTENANCE OF UNIFORM POSITION.

With most of the work, and particularly with those operations which require very clear and close vision, there is only one position in which it is possible to do the work to the best advantage as concerns either quality or speed. As a rule the posture which must be assumed is one in which the employee is stooped over a bench or table with the work only a few inches away from her eyes. Theoretically, almost all the employees have the choice of sitting or standing, and as a rule seats are provided in all the establishments wherever it is possible to utilize them. But owing to the fact that earnings are so directly connected with both the quantity and the quality of the work produced the employees must of necessity maintain the posture in which both these results can be best obtained.

COMPOSITION OF THE LABOR FORCE.

Most of the establishments visited were situated in large towns where the supply of labor is abundant, and there was evidence that in hiring employees the managers exercised careful discrimination based on experience. Hence the age, sex, and nationality of employees are not the result of mere chance, but are due to the fact that persons of those given characteristics have been found by experience to be best suited to the industry.

In view of this fact peculiar interest attaches to the predominance of women. It has already been stated that they form four-fifths of the total employees, but if employees engaged in such occupations as stoking, freight handling, dynamo tending, and the like be excluded, their proportion is larger. In the occupations in which women and girls are employed at all they form 96.8 per cent of the employees.

Of 2,756 concerning whom detailed information was secured, 34.7 per cent were native born of native parents, 40.3 per cent were native born of foreign parents, and 25 per cent were foreign born. Their age distribution was as follows:

[1] Vol. III, Glass Industry, pp. 479 481.

AGE DISTRIBUTION OF FEMALE EMPLOYEES.

Age.	Number.	Per cent.	Age.	Number.	Per cent.
Under 15 years	14	0.5	24 years	74	2.7
15 years	53	1.9	25 to 29 years	226	8.2
16 years	274	9.9	30 to 34 years	70	2.5
17 years	374	13.6	35 to 44 years	49	1.8
18 years	351	12.7	45 to 54 years	10	.4
19 years	321	11.6	Others reported as 21 years and over	192	7.0
20 years	281	10.2			
21 years	178	6.5	Total	2,756	100.0
22 years	151	5.5			
23 years	138	5.0			

Very young workers are noticeably few, only 2.4 per cent being under 16. Still the age level is low. Very nearly one-half (48.1 per cent) are found in the group aged 17 to 20, inclusive, and three-fifths (60.4 per cent) are under 21. Only 12.9 per cent were reported as being 25 or over. As might be expected in so young a group, the great majority were single, 142 were married, and 79 were widowed, separated, or divorced.

HOURS OF LABOR.

In four establishments the working time was 10 hours a day from Monday to Friday and 5 hours on Saturday. In two cases the hours were shorter, 52½ and 54 hours a week, and in two establishments they were, respectively, 58 and 60 hours. The work is not seasonal, overtime was unusual, and nightwork for women was practically unknown.

EARNINGS.

The general level of wages in the electric-lamp industry is, for the women at least, relatively high. The average earnings per hour of all women over 16 years is 13.71 cents, which, assuming a 10-hour day and a 55-hour week as a rule for the industry, means approximately $1.35 per day, or $7.50 per week as the average wage. There is, however, a wide variation between the earnings in the various establishments, as shown in the following table:

AVERAGE EARNINGS PER HOUR AND PER FULL WEEK OF 55 HOURS FOR ALL FEMALES 16 YEARS OF AGE AND OVER IN INCANDESCENT ELECTRIC-LAMP ESTABLISHMENTS, BY NATIVITY.

Establishment.	Native born of native parents.		Native born of foreign parents.		Foreign born.		Total.		
	Employees.	Average earnings per hour.	Employees.	Average earnings per hour.	Employees.	Average earnings per hour.	Employees.	Average earnings per hour.	Average earnings per week.
A	473	$0.1398	791	$0.1381	447	$0.1398	1,711	$0.1390	$7.65
B	95	.1469	115	.1443	207	.1457	417	.1456	8.00
C	211	.1176	112	.1159	6	.1252	329	.1171	7.05
D	82	.1401	22	.1384	6	.1274	110	.1390	7.50
E	34	.1279	14	.1492	5	.1467	53	.1353	7.45
F	17	.1600	10	.1543	2	.1693	29	.1586	8.35
G	19	.1115	6	.1198	3	.1630	28	.1189	6.90
H	11	.1072	.....	.....	1	.1234	12	.1084	5.95
Total	942	.1332	1,070	.1360	677	.1419	2,689	.1371	7.60

The data with reference to local conditions necessary to explain the differences existing between the average wages in the various establishments are lacking. The differences are not to be explained by the relative piece rates paid, or by the size of the town, or by the general composition of the labor force. The two establishments in which the wage level is lowest are situated, the one in a city of over 50,000, the other in a small town; while those two in which the level is highest are likewise one in a large city, the other in a town.

GENERAL CONDITIONS.

With one exception the buildings were far from modern and generally inferior to what would be expected in so highly developed an industry. Fire escapes were rather generally lacking. There were only two establishments in which any special facilities for washing were provided; these two also had dressing rooms, but the remaining six had only closets or lockers in which clothing could be hung. Lunch rooms and rest rooms were exceptional, only one example of each being found. Toilet accommodations for women were sufficient in five establishments and in good condition as to cleanliness in the same number of cases.

SUMMARY.

The manufacture of electric lamps is very largely in the hands of women and girls. It is work which requires speed and dexterity rather than manual strength, so is unsuited to many of the newer immigrants; practically 75 per cent of the female workers studied were native born. The age level is low, three-fifths of the female employees being under 21, but child labor is little used, only 2.4 per cent being under 16. Earnings are relatively high, the average wage per week varying from $5.95 to $8.35, according to the establishment studied. The most conspicuously objectionable feature of the work is the speed at which it is carried on, this speed being carefully fostered and insisted upon by the managers.

FAMILY CONDITIONS AND SOURCES AND AMOUNT OF FAMILY INCOME.

The fourth part of the report is devoted to a study of family conditions of woman and child workers in the glass industry. To obtain the data for this, the names of a certain number of woman and child employees of various ages were taken from the pay rolls of each establishment investigated, visits were made to their homes, and schedules of detailed information secured for them. Altogether 2,137 families were visited, distributed over 14 States, in more than 100 separate communities.

GENERAL CHARACTER OF FAMILIES.

Few or no distinctive characteristics were presented by these families. "So far as could be ascertained they do not form a particular class, nor do they represent any particular element of American life." Racially and industrially they reflected the general conditions of the community in which they were found. No especial type seems to be peculiarly adapted to glass making, and no one race or class has shown a marked tendency to take it up. There is almost no trace in the glass industry of such an institution as the "glass family," in the sense that there is in certain cotton communities a distinct type of "mill family." For this there are two reasons: First, the glass factory can rarely offer employment to all the members of a family, and secondly, when it does this condition is only a temporary one. A glass factory might be able to use all the young boys it can obtain, but owing to the make-up of its working force it would normally employ only a small proportion of the adult male labor naturally found in the families from which these young boys came, and a still smaller proportion of the adult female labor. Owing to this same make-up of the working force, as the young boys become in their turn adults many of them must of necessity leave the industry, so that even in the exceptional cases where a whole family is employed, as the children grow older some of them must normally leave the glass factory and the family becomes diversely employed.

COMPOSITION OF FAMILIES; EMPLOYMENT OF MEMBERS.

The 2,137 families averaged 6.3 members and 3 wage earners per family. In 80.6 per cent of these families the father, and in 97.7 per cent the mother was living and with the family. In 47 per cent there were male children aged 16 or over, in 52.8 per cent there were female children aged 16 and over, in 78.7 per cent children of 14 or 15, and in 77 per cent children under 14. Practically 95 per cent of the fathers and 13.9 per cent of the mothers were working and contributing to the family support. The proportion of children in the various age groups at work was as follows:

	Per cent.
Males 16 and over	96.4
Females 16 and over	80.2
Children 14 and 15 years of age	89.5
Children under 14 years of age	4.1

The proportion of younger children at work can not be taken as significant, since in many cases the family was visited simply because it had a child at work. The proportion of those over 16 at work is probably more normal. It will be observed that while the employment of girls aged 16 or over is less universal than the em-

ployment of boys of that age, it is still very common, four-fifths of such girls being at work. The putting to work of children under 14 is evidently comparatively unusual in these families.

SOURCES AND AMOUNT OF FAMILY INCOME.

The net incomes of the families differ widely according to the make-up of the contributing membership. These variations are shown in the following table:

Average net income, per family, of families having—	
Fathers at work	$920
Mothers at work	616
Male children 16 and over at work	1,017
Female children 16 and over at work	905
Children 14 and 15 at work	863
Children under 14 at work	759
Net income for all families	855

It would be expected that mothers of families would not be working outside their homes unless under decided economic pressure, so it is not surprising that the families with such workers show the lowest net incomes found, falling more than $200 below the average for the whole group. The families in which children under 14 are at work have the next lowest incomes, falling $96 below the general average, while the highest prosperity is found in the families having male children 16 or over at work. In the majority of these families there would also be fathers at work and the larger incomes show the effect of the combined earnings.

The proportion of the net family income contributed by each class of workers was as follows:

	Per cent.[1]
Fathers	56.0
Mothers	25.1
Male children 16 and over	37.8
Female children 16 and over	26.7
Children 14 and 15 years of age	18.9
Children under 14	15.7

Perhaps the most striking feature of this table is the percentage contributed by working fathers. The father's full earnings are counted as contributions, yet in families having fathers less than three-fifths of the family income came from that source. Evidently, although the father was the most important single wage earner, his earnings alone would have been very far from sufficient to keep up the family standards in a great number of cases. The proportions contributed by other members show no unexpected features.

[1] These per cents apply in each case only to the incomes of families having workers of the specified class.

An interesting point in the discussion of the family incomes is the extent to which the wage-earning members turn their earnings into the common fund. The father, mother, and younger children usually contribute all they make, but the children aged 16 and over often expect to retain part of their earnings. The following table shows the degree to which this is done:

PERCENTAGES OF CONTRIBUTION TO THE FAMILY FUNDS BY CHILDREN 16 YEARS OF AGE AND OVER AND THEIR AVERAGE EARNINGS AND CONTRIBUTIONS DURING THE YEAR, BY SEX OF CHILDREN AND NATIVITY AND RACE OF HEADS OF FAMILIES.

Nativity and race of head of family.	Number of families with—		Average earnings of—		Average amount paid to family by—		Per cent of earnings given family by—	
	Male wage earners in this age group.	Female wage earners in this age group.	Males.	Females.	Males.	Females.	Males.	Females.
Native born of native parents:								
White	375	329	$369	$198	$250	$161	67.8	81.2
Colored	28	30	284	174	206	158	72.7	91.0
Native born of foreign parents	108	112	355	218	260	186	73.5	85.4
Foreign born	473	458	371	208	296	188	80.4	90.5
Total	984	929	366	204	273	177	74.6	86.4

Some very marked differences between races as well as between sexes appear in this table. For the group as a whole the adult female children contribute a distinctly larger portion of their earnings to their families than do the adult male children, 86.4 per cent as against 74.6 per cent. A larger proportion of their earnings is contributed by the native-born colored females than by those of any of the other race groups. The foreign-born daughters of foreign parents contribute more than native-born daughters of foreign parents and the latter in turn more than native-born daughters of native parents. The difference between any of these groups is not very marked, the extremes being 81.2 per cent and 91 per cent. Among the male adult children the only difference in this racial order is that the native-born colored stand next to the native-born whites of native parents in the relative smallness of their contributions.

MARRIED WOMEN AT WORK.

A special study was made of the married women living as heads of families who were engaged in gainful pursuits. Of these there were 291, whose racial distribution is shown by the following figures:

NUMBER AND PER CENT OF MOTHERS CONTRIBUTING TO THE FAMILY SUPPORT, BY NATIVITY AND RACE.

Nativity and race of mothers.	Number.	Per cent living with family.
Native born of native parents:		
White	115	15.1
Colored	56	68.3
Native born of foreign parents:		
English	7	25.9
French	.....	.....
German	16	10.5
Irish	14	18.9
Italian, South	.....	.....
Polish	.....	.....
Other races	.....	.....
Total	37	13.9
Foreign born:		
English	7	9.2
French	5	8.9
German	23	11.3
Irish	14	12.5
Italian, South	7	14.9
Polish	7	3.4
Other Slavs	4	3.0
Other races	6	11.1
Total	83	8.5
Grand total	291	13.9

The colored families show a much larger proportion of gainfully employed mothers than appears in any other race, while among the Polish and other Slavic races such employment of married women is unusual.

The average per capita income of the families in which the mothers were at work, exclusive of the mother's contribution, varied, according to the woman's condition as to husband, from $1.26 to $2.10 per week; in 168 cases this per capita was less than $2 and in 110 it was less than $1.50. The average membership was 5. The average gross annual family income was $671 and the average annual earnings of the wives $154.

It may be accepted that among the families now being considered the employment at lucrative work of a married woman living as the maternal head of a household is almost entirely a matter of economic compulsion. Usually the mother works only as a result of family need—to assist the family when poverty presses, not simply to raise the standard of living, as is so often the case in the matter of child labor.[1]

To determine the causes of this economic necessity a special study was made of 140 families located in 8 representative communities in which the mother was gainfully employed. In 94 cases (67.2 per cent) the husband was either dead, had abandoned his family responsibilities, or was incapacitated, in 2 cases he was idle, and in 44

[1] Vol. III, Glass Industry, p. 535.

was at work. In other words, in only 32.8 per cent of these families was there a father able to work if he chose, while in 973 other families investigated in these 8 communities in which the mothers were not gainfully employed 84.3 per cent had fathers able to work.

The importance of the fact pointed out is clear. The absence from a family of a father able to contribute to its support in itself tends toward economic distress. Usually it means the withdrawal of the most responsible, if not the most important, contributor to the family support, and always it tends to change the economic organization of the family.[1]

In 13 of the 46 families in which there were fathers living and not incapacitated dissipation and shiftlessness on the part of the fathers were responsible for the necessity which forced the mother to work; in 10 cases the wife had gone to work owing to the temporary illness or disablement of the husband. In 23 cases the husband was a steady worker, but in only 6 of these cases did he rise above the grade of the unskilled laborer.

Only 35 married women, not heads of families, were found at work. Usually they were widows or divorced or separated wives who, the husbands' support having been withdrawn, were living with their parents, parents-in-law, or other near relatives. The group was so small that the data concerning it possess little significance.

SINGLE WOMEN 16 YEARS OF AGE AND OVER, AT WORK.

In 1,129 of the 2,137 families visited single women aged 16 and over were found to the number of 1,537. In every case these were either actual daughters of the families with whom they were living or were living with them as adopted daughters. The following table shows the number and per cent at work, using this term to indicate employment as wage earners:

NUMBER AND PER CENT OF SINGLE WOMEN 16 YEARS OF AGE AND OVER AT WORK AND NOT AT WORK.

	Number.	Per cent.
Females over 16 years of age and over:		
At work—		
In glass industry	780	63.2
Not in glass industry	455	36.8
Total at work	1,235	80.4
Not at work	302	19.6
Total investigated	1,537	100.0

Although this table shows four-fifths of these women at work, it yet does not fully present the prevalence of wage-earning employment among them. Most of those reported as not at work had been employed in previous years and expected to work again as soon as

[1] Vol. III, Glass Industry, p. 536.

work could be obtained. Evidently it was almost as much a matter of custom for the daughters as for the sons to go to work.

The average age at beginning work was 16, though the great majority had begun earlier. These women were in no sense temporary or casual workers. Almost without exception they held regular positions, usually at some form of factory work, and worked as regularly as their employment permitted. The following table shows the average number of days worked and the average daily and annual earnings during the preceding year of those for whom these facts could be learned:

AVERAGE ANNUAL DAYS WORKED AND AVERAGE EARNINGS OF SINGLE WOMEN 16 YEARS OF AGE AND OVER AT WORK, BY AGE.

Age.	Number reporting.	Average days worked past year.	Average earnings past year.	Average earnings per day worked.
16 years	283	216	$163	$0.75
17 years	233	228	182	.80
18 years	197	240	214	.89
19 years	106	231	206	.89
20 years	106	239	232	.97
21 years	75	233	219	.94
22 years	56	234	214	.91
23 years	45	244	244	.98
24 years	36	239	246	1.03
25 to 29 years	52	242	292	1.27
30 years and over	43	244	263	1.08
Total	1,232	231	205	.89

In this table, as in a previous one relating to earnings of women glass workers, there appears a fairly steady increase with age in earning capacity which reaches its climax between 25 and 30, the group aged 25 to 29 showing the maximum daily and annual earnings. The number of days worked during the year does not vary greatly with age; such variation as exists seems mainly irregular.

CHILDREN AT WORK.

In the 2,137 families investigated there were 5,212 children between 6 and 16 years old. The following table shows the occupation of these children by age groups:

CHILDREN UNDER 16 YEARS OF AGE AT WORK, AT SCHOOL, AND AT HOME, BY AGE GROUPS.

Age groups.	Total number.	At work.		At school.		At home.	
		Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
6 to 11 years	2,343	26	1.1	2,022	86.3	295	12.6
12 and 13 years	975	171	17.5	773	79.3	31	3.2
Total 6 to 13 years	3,318	197	5.9	2,795	84.3	326	9.8
14 and 15 years	1,894	1,696	89.5	134	7.1	64	3.4
Total 6 to 15 years	5,212	1,893	36.3	2,929	56.2	390	7.5

The proportion at school decreases and the proportion at work increases progressively in each successive age group. The proportion in the youngest group of those neither at work nor at school depended largely upon the opportunities for school going offered by the neighborhood in which the child happened to live.

The employment of children 14 or 15 years old was very general, only 119 families being found in which there were children of these ages not at work (7.1 per cent of the total families having such children). In all 1,696 children of these ages were found at work, representing 1,562 families. One was an orphan, 228 were children of widows, 66 were children of deserted mothers, 33 had incapacitated fathers, 18 had idle fathers, 78 had both parents at work, and 1,272 had fathers at work. Exclusive of the children's earnings, the average annual income of the families these children came from was $762, and the average weekly per capita income was $2.22, this per capita ranging from less than $1 in the case of 210 families to $4 or over in the case of 166 families. The average membership per family was 6.6.

The employment of children under 14 was not common, only 197 in a total of 4,768 being found at work. Of these 197 the boys numbered 180; the girls 17. No girls and only 26 boys were found working under 12 years of age. There were no full orphans among them, but 34 were children of widows, 9 of deserted wives, 1 had an incapacitated and 1 an idle father, 24 had both father and mother at work, and in 128 cases the father but not the mother was working. The average family membership was 6.8, the average per capita weekly earnings, exclusive of earnings of children under 14, were $1.97, the range being from less than $1 (30 families) to $4 and over (5 families).

Employment of orphans.

As the glass industry is often charged with exploiting the labor of orphan children, inquiry was made as to the parental condition of all children found working in glass factories. Reports were received from 3,433. Of these 2.4 per cent were full orphans, 15.4 per cent were fatherless, though their mothers were living, 7.1 per cent had fathers living but mothers dead, and 75.1 per cent had both parents living.

It is impossible to say how this compares with the situation in industry generally, but a comparison is possible with three other industries covered by this investigation—cotton, silk, and clothing. In each of these, as in the glass industry, names of women and children had been taken from pay rolls and data secured concerning their family condition. A smaller proportion of orphanhood was disclosed

by this method than by the questioning in the factory, because ordinarily family schedules could not be obtained for children whose parents were both dead. Nevertheless, as the same method was pursued in all four investigations, the degree of error is presumably the same, and results seem comparable. The following table presents the comparison in concise form:

NUMBER OF CHILDREN UNDER 16 AT WORK HAVING FATHERS DEAD, DIVORCED, OR DESERTED, AND INCAPACITATED, WITH PER CENT EACH GROUP IS OF TOTAL CHILDREN UNDER 16 YEARS AT WORK, BY INDUSTRIES.

Industry.	Father dead.		Father divorced or deserted.		Father incapacitated.		Total.		Total number of children under 16 years at work.
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	
Clothing...	117	15.7	18	2.4	27	3.6	162	21.7	746
Glass.....	263	13.9	75	4.0	34	1.8	372	19.7	1,893
Cotton.....	404	13.3	164	5.4	115	3.8	683	22.5	3,032
Silk.....	234	13.7	37	2.2	47	2.8	318	18.7	1,704

It appears from this table that the glass industry is proportionately a smaller employer of fatherless children than is the clothing industry. As, however, the number of children in the clothing industry is small, a more satisfactory comparison is with the silk and cotton industries. Such a comparison shows the glass industry to be no larger an employer of fatherless children than the cotton industry, and but slightly larger than the silk industry. From these data it is evident that there is no warrant for the charge that the glass industry exploits such children in any unusual degree.

RELATION OF EMPLOYMENT OF CHILDREN TO FAMILY INCOME.

In regard to this point a careful study was made of 864 families in eight representative communities, each having at least one child under 16 at work. The total earnings of all immediate members of the family living at home, plus gifts or income from lodgers, together with the money value of any produce raised and used by the family, have been combined to give the total income of the family. The following table shows the incomes of the families averaged for the year studied, first including and second excluding the earnings of children under 16.

FAMILIES IN EIGHT SELECTED COMMUNITIES RECEIVING CLASSIFIED PER CAPITA WEEKLY INCOMES, WITH AND WITHOUT EARNINGS OF CHILDREN, AND PER CENT RECEIVING LESS THAN THE HIGHEST AMOUNT SPECIFIED.

Per capita weekly income.	Number of families in each per capita group with earnings of children—		Per cent of families receiving less than highest amount of specified group with earnings of children—	
	Included.	Excluded.	Included.	Excluded.
Under $0.40	1	17	0.1	2.0
$0.40 and under $0.80	6	37	.8	6.3
$0.80 and under $1.20	41	85	5.5	16.1
$1.20 and under $1.60	61	118	12.6	29.7
$1.60 and under $2	102	109	24.4	42.4
$2 and under $2.40	113	122	37.5	56.5
$2.40 and under $2.80	107	80	49.9	65.7
$2.80 and under $3.20	95	73	60.9	74.2
$3.20 and under $3.60	86	55	70.9	80.6
$3.60 and under $4	54	43	77.2	85.5
$4 and under $4.40	50	37	83.0	89.8
$4.40 and under $4.80	34	22	86.9	92.3
$4.80 and under $5.20	28	18	90.1	94.4
$5.20 and under $5.60	28	5	93.3	95.0
$5.60 and under $6	10	12	94.5	96.4
$6 and under $6.40	7	6	95.3	97.1
$6.40 and over	41	25	100.0	100.0
Total	864	864	.....	.....

The variations in this table are extreme, whether or not the children's earnings are included. As a basis for discussion it was assumed that a weekly per capita income of $2 is the least upon which a normal family can avoid the pressure of actual poverty. It appears that 498 (57.6 per cent) of these families were in possession of an income above this amount, even if the earnings of the children were excluded. With this group, therefore, it was concluded that economic necessity as distinguished from a simple desire for money was not the primary motive for putting the children to work. Seven other families possessed property the sale of which would have enabled them to dispense with their children's earnings for a considerable period at least; so that in their cases also it can not be said that absolute poverty forced them to let the children work. Fifty-two families were found in which adults who should have contributed to the income had been idle during all or part of the preceding year without such sufficient cause as illness, inability to obtain work, or the like. Had they not been thus unjustifiably idle, the income would have reached or exceeded $2 per capita weekly. This leaves 307 families (35.5 per cent of the original group) in which it might fairly be said that the children's work was necessitated by poverty.[1]

[1] In Vol. VII, Conditions under which Children Leave School to Go to Work, p. 46, a similar study of incomes and resources shows that of 620 children 186, or 30 per cent, were forced to take up work by economic necessity.

REASONS, OTHER THAN ECONOMIC, FOR EMPLOYMENT OF CHILDREN.

Several reasons are given to account for the employment of children under 16 when it is not a matter of economic necessity. One of the most important is the desire to have the boy learn the trade, coupled with acquiescence in the claim set up by most glass men that to learn the trade of glass blower a boy must begin young. It has already been pointed out[1] that comparatively few of those who enter the boys' occupations ever become real apprentices; but since some do, each one has a chance.

Making this reason more effective is a disbelief in the utility of "book learning" in practical life.

> There was in Pennsylvania, New Jersey, and West Virginia * * * almost a settled conviction that the efficiency of schools and school models and ideals and its methods of obtaining them were alike inadequate to the needs of real life, and that the boy would learn more of real use to him in the factory than in the schools.[2]

In the case of immigrants a frequent cause was the idea that the school was a preparation chiefly for confirmation, and that consequently when a child had been confirmed there was no purpose in his attending longer. A more active reason was the absorbing desire among immigrants to own a home. "At enormous risks they buy a home, paying a little down on it, and from that moment every particle of earning power the family possesses must be taxed to its fullest until the mortgage is paid." Company pressure as a cause for putting children to work seemed of little importance.

ILLITERACY AMONG CHILDREN UNDER 16.

Illiteracy in the sense of being totally unable to read and write was rare, only 64, or 3.4 per cent, of the 1,893 children under 16 from whom information on this point was received being thus handicapped. Forty-four others were unable to read and write English, though able to read and write their own language.

COMPANY STORES.

The company store as an adjunct of a glass factory is found mainly in the East, especially in New Jersey. Its importance has declined materially even here since 1900, owing largely to the opposition of the Glass Bottle Blowers' Association, which in 1902 took a decided stand against it in a strike and won. This settled the question, as far as skilled operatives in union factories were concerned, but left the system unchanged for unskilled labor and employees of

[1] See p. 132. [2] Vol. III, Glass Industry, p. 588.

nonunion factories. Nine company stores were found in operation during the investigation. Practically all the unskilled laborers who had families traded either wholly or in part at the company store. A number of cases were found in which the credit at the company store was used to its fullest extent, so that on pay day nothing was coming to the worker. A number of these cases were investigated, and it was found that the situation was due not to shiftlessness or poor management, but to the poor earning capacities of the uneducated and untrained workers of the family.

Statements differed as to whether buying at the company store was compulsory. Most of the employees questioned felt that a failure to give the company stores at least a part of their trade rendered employees liable to be discharged, or at least to be laid off temporarily, as soon as such action did not interfere with the company's interest. Among employers there seemed an expectation that employees should trade at the company stores. In general the prices at the company stores ranged higher than at independent stores.

SUMMARY.

The glass industry is a large employer of boys, and to some extent an employer of girls and women. The boys' occupations for the most part involve exposure to extreme temperatures, frequently demand very rapid action, often involve night work, and wherever the two-shift system is used permit a peculiarly exhausting form of overwork. Only a small proportion of the boys employed have any chance of becoming glass blowers, and for the rest it is a blind-alley occupation of a pronounced type.

The majority of the women and girls employed are in comparatively light occupations, involving no necessarily unhealthy conditions. A few occupations are distinctly harmful, but few women are found in them. The work done by women and girls is very rarely more than semiskilled at the best and to a large extent is entirely unskilled. The speed demanded is the general criticism which can be directed against it. Earnings compare favorably with those of other occupations followed by women.

CHAPTER IV.—THE SILK INDUSTRY.

The fourth volume of the report on the Condition of Woman and Child Wage Earners in the United States consists of a study of the silk industry in New Jersey and Pennsylvania. In New Jersey the investigation was confined to Paterson, the most important center of the industry, not only in that State but in the entire country. In Pennsylvania it was limited to Lackawanna and Luzerne Counties and to a few mills in Lehigh County, most of the Pennsylvania silk mills being located in these counties. The investigation was carried on from October, 1907, to June, 1908. In all 174 mills—138 in Paterson and 36 in Pennsylvania—were visited. "The aim was to select in each case such mills as would be representative of the industry, including some that showed the best conditions, some that showed the worst, and some in which average conditions prevailed." The number of mills visited in each State, the number devoted to each of the three most important branches of the silk industry, the number of employees, and their sex and age distribution are shown in the following table:

NUMBER OF ESTABLISHMENTS INVESTIGATED AND NUMBER AND PER CENT OF EMPLOYEES OF EACH SEX AND AGE GROUP, BY STATE AND BRANCH OF THE INDUSTRY.

State and branch of industry.	Establishments investigated.	Number of employees.						Per cent of total employees.				
		16 years and over.		Under 16 years.			Total.	16 years and over.		Under 16 years.		
		Male.	Female.	Male.	Female.	Total.		Male.	Female.	Male.	Female.	Total.
New Jersey:												
Broad silk	67	4,304	4,211	143	216	359	9,164	50.1	45.9	1.6	2.4	4.0
Silk ribbons	31	1,850	2,566	100	204	304	4,722	39.2	54.4	2.1	4.3	6.4
Silk throwing	40	454	927	137	136	273	1,654	27.5	56.0	8.3	8.2	16.5
Total	138	6,608	7,706	380	556	936	15,540	44.4	49.6	2.4	3.6	6.0
Pennsylvania:												
Broad silk	11	198	2,459	98	523	621	3,278	6.0	75.0	3.0	16.0	19.0
Silk ribbons	2	142	205	17	25	42	349	36.5	52.7	4.4	6.4	10.8
Silk throwing	23	239	1,678	102	720	822	2,739	8.7	61.3	3.7	26.3	30.0
Total	36	579	4,342	217	1,268	1,485	6,406	9.0	67.8	3.3	19.9	23.2
Aggregate:												
Broad silk	78	4,502	6,670	241	739	980	12,442	38.5	53.6	1.9	6.0	7.9
Silk ribbons	33	1,992	2,771	117	229	346	5,111	39.0	54.2	2.3	4.5	6.8
Silk throwing	63	693	2,605	239	856	1,095	4,393	15.8	59.3	5.4	19.5	24.9
Total	174	7,477	12,046	597	1,824	2,421	21,946	34.1	54.9	2.7	8.3	11.0
New Jersey mills from which pay rolls were secured:												
Broad silk	29	2,476	2,513	83	136	219	5,188	47.6	48.4	1.6	2.4	4.0
Silk ribbons	18	547	1,101	42	64	106	1,994	29.4	55.3	2.1	3.2	5.3
Silk throwing	40	454	927	137	136	273	1,654	27.5	56.0	8.3	8.2	16.5
Total	87	3,517	4,541	262	336	598	8,836	39.8	53.6	2.9	3.7	6.6

THE INDUSTRY.

The silk industry has been known in the United States for many years, but it was of little importance before the Civil War. The imposition of heavy war duties in 1861 and again in 1864 on silk and other luxuries brought a number of silk manufacturers with their machinery and operatives from England to Paterson and gave the industry its first successful impetus.

Paterson, N. J., has been the principal silk manufacturing city in the United States since the industry was established. Its leadership was owing partly to its proximity to New York, the leading silk market of the country, partly to its abundant means of transportation, and partly to its labor supply. Women and children have always formed an important part of the working force of a silk mill, and in the early days of the industry there was little opportunity for their employment in Paterson outside of the silk mills. As industrial openings became more plentiful and the supply of workers in consequence less certain, the manufacturers sought fresh supplies of cheap labor by establishing themselves in Pennsylvania, especially in the mining towns, where there was no other opportunity for women and girls to secure gainful employment. This did not mean giving up the New Jersey plants, but more and more these have been devoted to the highly skilled branches of the industry, while the Pennsylvania mills have taken chiefly the less skilled branches in which the labor of women and children can be utilized.

Of late years the supply of cheap labor in Pennsylvania has shown signs of failing, and an effort has been made to establish the industry in the South.

> It is apparent * * * that northern silk manufacturers are establishing plants in Southern States, most of the mills having been started since 1900; that of the 15 silk mills in Maryland, Virginia, North Carolina, and Georgia 12 are branches of New Jersey, New York, and Pennsylvania mills or are controlled by them; that the mills are largely of the class which is always seeking child labor or very cheap labor; and that the States chiefly selected—Maryland and Virginia—have few cotton manufacturing plants.[1]

New Jersey and Pennsylvania are still, however, the great centers of the silk industry, in 1905 containing 72 per cent of the total number of silk looms and 70.6 per cent of the silk spindles in the whole industry.

The growth of the silk industry and its changing importance as an employer of women and children is shown in the following table:

[1] Vol. IV, Silk Industry, p. 22.

AVERAGE NUMBER OF EMPLOYEES AND PER CENT OF TOTAL EMPLOYEES IN THE SILK INDUSTRY, BY SEX AND BY AGE GROUPS, IN EACH SPECIFIED YEAR, 1870 TO 1905.

[From Special Reports of Census Office, Manufactures, 1905, Part III, p. 161.]

Year.	Average number of employees.				Per cent of total employees.		
	Men 16 years and over.	Women 16 years and over.[1]	Children under 16 years.[1]	Total.	Men 16 years and over.	Women 16 years and over.[1]	Children under 16 years.[1]
1870	1,734	3,529	1,386	6,649	26.1	53.1	20.8
1880	9,375	16,396	5,566	31,337	29.9	52.3	17.8
1890	17,602	28,914	2,866	49,382	35.6	58.6	5.8
1900	24,706	34,797	6,413	65,416	37.0	53.2	9.8
1905	27,037	45,198	7,366	79,601	34.0	56.8	9.2

[1] Girls 15 years of age are classed as "women" in 1870, 1880, and 1890 and as children in 1900 and 1905, but they would probably not constitute more than 3 per cent of the total females.

While the total number of employees has increased over twelvefold, the relative number of women shows but a slight increase, while the proportion of children has noticeably decreased. In these respects the industry has developed very differently in the two States investigated, as shown by the following table:

NUMBER AND PER CENT OF MEN, WOMEN, AND CHILDREN EMPLOYED IN THE SILK MILLS OF NEW JERSEY AND PENNSYLVANIA IN EACH SPECIFIED YEAR, 1870 TO 1905.

[From Special Reports of Census Office, Manufactures, 1905, Part III, p. 176.]

Year.	Average number of employees.				Per cent of total employees.		
	16 years and over.		Under 16 years.	Total.	16 years and over.		Under 16 years.
	Men.	Women.			Men.	Women.	
New Jersey:							
1870	733	1,162	805	2,700	26.3	41.6	32.1
1880	4,696	5,340	2,493	12,549	37.4	42.7	19.9
1890	7,773	8,773	889	17,445	44.6	50.3	5.1
1900	11,279	11,679	1,199	24,157	46.7	48.3	5.0
1905	11,361	12,947	1,173	25,481	44.6	50.8	4.6
Pennsylvania:							
1870	266	655	15	936	28.4	70.0	1.6
1880	1,000	1,870	319	3,189	31.4	58.6	10.0
1890	2,420	5,617	1,293	9,330	25.9	60.2	13.9
1900	5,214	11,565	4,249	21,028	24.8	55.0	20.2
1905	6,318	15,863	4,734	26,915	23.5	58.9	17.6

New Jersey shows an increase in the proportion of women employed, a much larger increase in the proportion of men, and a very marked falling off in the proportion of children; in other words, it conforms to the course of the industry as a whole. But in Pennsylvania there has been a progressive decrease in the proportion of both men and women and an increase in the proportion of children employed. An important cause for this difference is found in the relative increase in Pennsylvania and decrease in New Jersey of silk throwing or spinning. This is one of the less skilled branches of the

industry, which can easily be done by young workers. Wherever it is common, the importance of children in the industry increases.

THE LABOR FORCE.

From 87 Paterson mills and from 36 in Pennsylvania pay-roll data were secured and full details obtained concerning the employees. The age and sex distribution of these employees was as follows:

NUMBER AND PER CENT OF MALE AND FEMALE EMPLOYEES IN SPECIFIED AGE GROUPS IN 87 NEW JERSEY MILLS AND IN ALL PENNSYLVANIA MILLS INVESTIGATED.

Age.	Number of employees.					
	New Jersey.			Pennsylvania.		
	Males.	Females.	Total.	Males.	Females.	Total.
Under 12 years	1	.....	1	1	8	9
12 and 13 years	18	19	37	43	228	271
14 and 15 years	243	307	550	173	1,032	1,205
Total under 16 years	262	326	588	217	1,268	1,485
16 and 17 years	(1)	(1)	(1)	131	1,620	1,751
18 to 20 years	(1)	(1)	(1)	83	1,277	1,360
Total under 21 years	(1)	(1)	(1)	431	4,165	4,596
21 years and over	(1)	(1)	(1)	232	1,445	1,677
Total 16 years and over	3,517	4,741	8,258	[2] 579	4,342	[2] 4,921
Grand total	3,779	5,067	8,846	[2] 796	5,610	[2] 6,406
	Per cent of employees.					
Under 12 years	(3)	.....	(3)	0.1	0.1	0.1
12 and 13 years	0.5	0.4	0.4	5.5	4.0	4.3
14 and 15 years	6.4	6.0	6.2	21.7	18.4	18.8
Total under 16 years	6.9	6.4	6.6	27.3	22.5	23.2
16 and 17 years	(1)	(1)	(1)	16.4	28.9	27.3
18 to 20 years	(1)	(1)	(1)	10.4	22.8	21.2
Total under 21 years	(1)	(1)	(1)	54.1	74.2	71.7
21 years and over	(1)	(1)	(1)	29.1	25.8	26.1
Total 16 years and over	93.1	93.6	93.4	[2] 72.7	77.5	[2] 76.8
Grand total	100.0	100.0	100.0	100.0	100.0	100.0

[1] Not reported.
[2] Including 133 males 16 years and over, exact ages not reported.
[3] Less than one-tenth of 1 per cent.

This shows very clearly the greater extent to which the Pennsylvania mills make use of women and girls, who constitute not far from nine-tenths of their working force (87.6 per cent), against less than three-fifths (57.3 per cent) in the New Jersey mills. It will be noticed that the difference is much greater in the proportion of girls under 16 than in the proportion of older female workers. It will also be noticed that the excess of children in the Pennsylvania as

compared with the Paterson mills is due almost wholly to the employment of girls, who form 85.4 per cent of the workers under 16 in Pennsylvania and only 55.4 per cent in Paterson.

RACE.

The racial distribution of the employees for whom information on this point was obtained was as follows:

RACE OF EMPLOYEES, BY SEX AND STATE.

Race.	New Jersey.			Pennsylvania.		
	Males.	Females.	Total.	Males.	Females.	Total.
American	297	564	861	287	1,583	1,870
Dutch	371	592	963			
English	784	881	1,665	48	275	323
German	685	865	1,550	97	856	953
Irish	344	1,038	1,382	85	1,102	1,187
Italian	732	657	1,389			
Lithuanian				6	114	120
Polish				32	673	705
Slovak				13	174	187
Welsh				33	407	440
Other races	566	470	1,036	59	358	417
Total	3,779	5,067	8,846	660	5,542	6,202

It appears that in the New Jersey mills the English employees were most numerous, constituting 18.8 per cent, the Germans being next with 17.5 per cent, followed by the Italians with 15.7 per cent and the Irish with 15.6 per cent. American employees were only 9.8 per cent. In the Pennsylvania mills, on the other hand, the American employees constituted 30.2 per cent, the Irish being 19.1 per cent, and the Germans 15.4 per cent, while the Polish were 11.4 per cent.

It is rather difficult to say whether any particular racial aptitude for the work is shown, or whether the silk workers merely reflect the general make-up of the community. The weavers, warpers, and twisters-in are the highest skilled and best-paid workers. In New Jersey the Italians showed the highest percentage, 52.3 per cent, of their number in these groups. Next came the English with 46.2 per cent, the Germans with 44.4 per cent, the Americans with 39.4 per cent, the Irish with 21.7 per cent, and the Dutch with 19.8 per cent. But in Pennsylvania the English show only 12.9 per cent of their number in these occupations. Among the Germans in Pennsylvania 42.4 per cent were in these occupations, 34.1 per cent of the Americans, and 22.1 per cent of the Irish. The newer races are found almost entirely in the relatively unskilled branches of the work.

CONJUGAL CONDITION.

No information was obtained as to the conjugal condition of the New Jersey employees, but unpublished figures were secured from the records of the census taken in 1905 relating to the conjugal condition of all female employees in the silk mills of Paterson. In the Pennsylvania mills investigated similar information was obtained from the employees themselves. In both States the girls under 16 were without exception single. The conjugal condition of the others is shown in the following table:

NUMBER AND PER CENT OF FEMALE SILK WORKERS 16 YEARS AND OVER OF EACH CONJUGAL CONDITION, BY RACE.

Race.	Total.	Single.		Married.		Widowed, divorced, separated, deserted.	
		Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
Paterson, N. J.:							
American	1,234	1,036	84.0	129	10.4	69	5.6
Dutch	538	496	92.2	32	5.9	10	1.9
English	848	680	80.2	104	12.3	64	7.5
German	789	605	76.7	123	15.6	61	7.7
Irish	1,117	953	85.3	78	7.0	86	7.7
Italian	355	193	54.4	148	41.7	14	3.9
Polish	3	3	100.0	.....	.....	.....	.....
Welsh	3	3	100.0	.....	.....	.....	.....
Other races	1,029	798	77.6	160	15.5	71	6.9
All races	5,916	4,767	80.6	774	13.1	375	6.3
Pennsylvania:							
American	1,332	1,219	91.5	86	6.5	27	2.0
English	220	216	98.2	1	.5	3	1.3
German	713	629	88.2	73	10.2	11	1.6
Irish	933	914	98.0	11	1.2	8	.8
Lithuanian	58	58	100.0	.....	.....	.....	.....
Polish	380	374	98.4	4	1.1	2	.5
Slovak	97	96	99.0	.....	.....	1	1.0
Welsh	330	323	97.9	2	.6	5	1.5
Other races	217	208	95.9	7	3.2	2	.9
All races	4,280	4,037	94.3	184	4.3	59	1.4

The most immediately striking feature of this table is the difference between the two groups, 94.3 per cent of the Pennsylvania workers being single as against 80.6 per cent of the Paterson workers. No explanation is offered of the difference, which appears in practically every race group, except the Polish and Welsh, whose representation among the Paterson workers is too small to be considered. The relatively small proportion of Italian women who were single is also striking. The willingness to have their married women employed outside the home seems almost a racial characteristic of the Italians, as it was found in many other industries, though rarely in as marked a degree as here.

OCCUPATIONS, BY SEX AND AGE.

The distribution of the workers by sex and age among the leading occupations is shown in the following table:

NUMBER AND PER CENT OF EMPLOYEES IN 13 SELECTED OCCUPATIONS, BY AGE AND SEX.

Occupation.	Number.						Per cent.					
	16 years of age and over.		Under 16 years of age.			Total.	16 years of age and over.		Under 16 years of age.			Total
	Male.	Female.	Male.	Female.	Total.		Male.	Female.	Male.	Female.	Total.	
New Jersey:												
Bobbin carriers	19	.....	73	1	74	93	0.6	.....	27.9	0.3	12.6	1.0
Doublers	.....	278	.....	18	18	296	.....	5.9	.....	5.5	3.0	3.3
Lasers	6	9	43	35	78	93	.2	.2	16.4	10.7	13.3	1.0
Pickers, cloth	3	318	.....	29	29	350	(1)	6.7	.....	8.9	4.9	4.0
Quillers	1	307	.....	27	27	335	(1)	6.5	.....	8.3	4.6	3.8
Reelers	93	2	13	4	17	112	2.6	(1)	5.0	1.2	2.9	1.3
Spinners	244	6	9	12	21	271	6.9	.1	3.4	3.7	3.6	3.1
Twisters-in	147	6	.....	.....	.....	153	4.2	.1	.....	.....	.....	1.7
Warpers, horizontal	196	144	.....	.....	.....	340	5.6	3.0	.....	.....	.....	3.8
Weavers, broad silk	1,384	845	.....	.....	.....	2,229	39.4	17.8	.....	.....	.....	25.2
Weavers, ribbon	433	394	.....	.....	.....	827	12.3	8.3	.....	.....	.....	9.4
Winders, hard silk	.....	521	.....	26	26	547	.....	11.0	.....	8.0	4.4	6.2
Winders, soft silk	.....	514	.....	1	1	515	.....	10.9	.....	.3	.2	5.8
Other occupations	991	1,397	124	173	297	2,685	28.2	29.5	47.3	53.1	50.5	30.4
Total	3,517	4,741	262	326	588	8,846	100.0	100.0	100.0	100.0	100.0	100.0
Pennsylvania:												
Bobbin carriers	23	3	75	36	111	137	4.0	.1	34.5	2.9	7.5	2.1
Doublers	1	437	3	115	118	556	.2	10.1	1.4	9.1	7.9	8.7
Lasers	.....	21	.....	121	121	142	.....	.5	.....	9.5	8.2	2.2
Pickers, cloth	.....	119	.....	17	17	136	.....	2.7	.....	1.3	1.1	2.1
Quillers	.....	126	.....	53	53	179	.....	2.9	.....	4.2	3.6	2.8
Reelers	5	217	33	147	180	402	.9	5.0	15.2	11.6	12.1	6.3
Spinners	86	462	48	267	315	863	14.8	10.6	22.1	21.1	21.2	13.5
Twisters-in	30	24	1	.....	1	55	5.2	.6	.5	.....	.1	.8
Warpers, horizontal	2	70	.....	.....	.....	72	.3	1.6	.....	.....	.....	1.1
Weavers, broad silk	13	1,104	4	43	47	1,164	2.2	25.4	1.8	3.4	3.2	18.2
Weavers, ribbon	93	53	1	2	3	149	16.1	1.2	.5	.2	.2	2.3
Winders, hard silk	.....	895	1	293	294	1,189	.....	20.6	.5	23.1	19.8	18.6
Winders, soft silk	.....	165	1	37	38	203	.....	3.8	.5	2.9	2.6	3.2
Other occupations	326	646	50	137	187	1,159	56.3	14.9	23.0	10.7	12.5	18.1
Total	579	4,342	217	1,268	1,485	6,406	100.0	100.0	100.0	100.0	100.0	100.0

[1] Less than one-tenth of 1 per cent.

SILK-MILL PROCESSES AND OCCUPATIONS.

Before considering the employment of either women or children in silk mills some description of the processes carried on therein seems necessary. The following table shows the main processes, with the kind of workers engaged in each, in the two States studied:

PROCESSES AND OCCUPATIONS IN SILK MILLS.

Silk throwing.

Process.	Machine used.	Occupation.	Class of persons employed.	State.	Skilled or unskilled.
Soaking	None	Soaker	Men	N. J. and Pa.	Unskilled.
Winding	Winding frame	Winder	Women and girls	N. J. and Pa.	Semiskilled.
Spinning, first time	Spinning frame	Spinner, first time	Men	N. J.	Semiskilled.
			Girls and boys	Pa.	
Doubling	Doubling frame	Doubler	Women and girls	N. J. and Pa.	Semiskilled.
Spinning, second time	Spinning frame	Spinner, second time	Men	N. J.	Semiskilled.
			Girls and boys	Pa.	
Reeling	Reeler or reel	Reeler	Men and boys	N. J.	Unskilled.
			Girls and boys	Pa.	
Lacing	None	Lacer	Girls and boys	N. J.	Unskilled.
			Girls	Pa.	
Bundling	None	Bundler or maker-up	Men and women	N. J.	Skilled.
			Women	Pa.	

Broad silk and silk ribbons.

Winding	Winding frame	Winder	Women	N. J.	Semiskilled.
			Women and girls	Pa.	
Doubling	Doubling frame	Doubler	Women and girls	N. J.	Semiskilled.
			Girls	Pa.	
Warping, horizontal	Warping mill	Warper, horizontal	Men and women	N. J.	Skilled.
			Women and girls	Pa.	
Warping, Swiss	Warping mill	Warper, Swiss	Women and girls	N. J. and Pa.	Skilled.
Warping, direct	Warping machine	Warper, direct	Women and girls	N. J. and Pa.	Skilled.
Quilling	Quilling frame	Quiller	Women and girls	N. J. and Pa.	Semiskilled.
Twisting	None	Twister	Men	N. J.	Skilled.
			Men and women	Pa.	
Loom fixing	None	Loom fixer	Men	N. J. and Pa.	Skilled.
Weaving, broad silk	Loom	Weaver, broad	Men and women	N. J.	Skilled.
			Women and girls	Pa.	
Weaving, ribbons	Loom	Weaver, ribbons	Men and women	N. J. and Pa.	Skilled.
Cloth picking	None	Cloth picker	Women and girls	N. J. and Pa.	Skilled.

THROWING-MILL PROCESSES.

SOAKING.

The raw silk is usually received in bales containing 80 to 100 tightly twisted skeins. These are first weighed and assorted according to quality and then soaked for several hours in a solution of warm water, olive oil, and neat's-foot oil or similar substances. The silk is then partially dried—only partially since some moisture is required for the operations of winding and spinning—and then goes to the winders.

WINDING.

Each skein consists of a single thread about 1,200 yards in length. The skeins are placed on power reels or swifts, the ends of the threads are found and attached to empty bobbins, and the thread is wound upon these as they revolve rapidly. On a winding frame there are from 60 to 90 swifts, with 30 to 45 in one row or deck on each side.

Women and children both work at winding. The work consists of placing the skeins on the swifts, tying the ends of the threads together when they break, removing filled bobbins, and replacing

them with empty ones. The silk is wound twice, once before it is spun, which is called hard silk winding, and once after it has been spun and dyed, which is called soft silk winding. The process is the same in both cases, but the hard silk is harsher and more brittle. It therefore is more apt to break and the tying process is harder upon the fingers. In both kinds of winding the work is light and simple, and if the machinery is modern and well guarded it involves no danger. It requires, however, almost continuous standing and constant watchfulness, for the spindles are driven at the highest speed, and the threads are apt to break frequently. The operator has to bend forward slightly in order to tie the broken ends, but this, it is said, does not make the work more arduous.

SPINNING.

In spinning the bobbins wound with silk are taken from the winding frame and placed in a vertical position on the lower row of spindles of a spinning frame. The end of each thread is found and attached to an empty bobbin placed on a spindle on the upper rail of the frame. As the spindles revolve the thread is unwound from the lower onto the higher bobbin, being given a twist in the process. Like winding, spinning is done twice, but the work of the spinner is the same in each of these processes. The spinner's part of the operation consists of watching the threads and tying together the ends of any which may break. She must also replace bobbins as may be necessary. She usually tends from 400 to 1,000 spindles, the number varying with the quality of silk that is being spun.

The spinner's work requires continuous standing and incessant watchfulness. It is impossible for her to see from any one position all the sides she is tending, and as there is apt at any moment to be a breakage in one of the 500 or more threads that are being spun, she must always be on the move. The work also involves frequent bending to place the bobbins on the lower row of spindles.

DOUBLING.

The process of doubling consists merely of uniting two or more strands into a single thread loosely held together. The frame used for this purpose is similar to that used for winding, except that instead of swifts there is a series of metal pins so arranged that after the bobbins have been placed upon them the threads can be easily drawn off and brought together as a single thread. The work of the doubler is of the same nature and extent as that of the winder.

REELING.

During the spinning processes the thread is wound upon bobbins. Before being dyed it must be put into the form of a skein again,

and this is done upon a machine called the power reeling machine. The bobbins of spun silk are placed upon a rail or row of metal pins near the bottom of the machine, the thread of each bobbin is found and attached to the reel and upon this it is wound into skeins. The reeler's work consists of putting the bobbins upon the frame, tying the ends of threads together when they break, and straightening out any snarls or tangles which may occur. The modern reeling frame is equipped with automatic stops, so that when the thread breaks or when the required amount of silk has been skeined the reel comes to a standstill.

The work of reeling itself is simple and light, but in Paterson the reeler is required to lift the reels from the frames and place them upon benches that they may be ready for the lacers. The reels weigh from 15 to 25 pounds, and it will be readily seen that lifting them into and out of the reeling frame is heavy work.

LACING.

In order to keep the thread from becoming knotted or snarled during the dyeing process the skeins are laced. This consists simply of running short strings in and out through each skein, dividing it into at least four parts as it is spread out upon the reel, and of tying the same. Lacing is done chiefly by young boys and girls. It is light and simple work, but calls for considerable deftness. There are generally a number of periods of rest while waiting for reels.

BUNDLING.

This consists of looking the skeins over for imperfections of any kind, then twisting them into tight rolls and packing them into a neat, compact bundle, ready to be sent to the dyehouse. The work of bundling is light and simple in the extreme, but the detection of imperfections calls for skill and knowledge.

WEAVING-MILL PROCESSES.

From the spinning mill the silk is sent to the dyehouse, where it is dyed by men, and from there it goes to the weaving mill. Here the first two operations, winding and doubling, are precisely the same as the processes of the same name in the spinning mills, except that they are now "soft silk" instead of "hard silk" winding and doubling. The first of the distinctively weaving mill processes is quilling; that is, transferring silk from bobbins to small spools or quills which when filled are placed in the shuttles of the loom. The work is practically the same as that of a winder or doubler, but is

even simpler, and the operatives, who are always females, are usually younger than those employed in winding and doubling.

WARPING.

Warping is the process of putting a given number of silk threads of a certain length upon the warp beam of a loom. The warper, on receiving the spools containing the silk, places them on the creel, which is a stand containing 400 to 600 metal pins on which the bobbins are placed. The ends of each spool are passed through a rack in which there is a series of glass pins between which the threads pass, and are guided as they leave the spools. The threads are then led through a reed and after being divided are attached to the warping mill.

The warping mill consists of a cylinder or frame of metal construction 8 to 12 yards in circumference placed horizontally upon frames in the horizontal and Swiss warping mills and vertically in the hand warper. The latter revolves by means of a crank turned by hand, while the former are turned by power which is controlled by a footboard lever.

To start the mill the warper presses on the lever with one foot and remains in a standing position. He watches the threads as they are being wound on the warping mill and remedies any defects in the silk, such as knots or snarled places, and pieces or ties together broken threads. When the required length, which is denoted by a dial and bell, has been wound on the mill the section of threads is cut in two and a new section started.

After the required length and number of threads have been assembled on the mill the warp is transferred to warp beams or rolls to be inserted in the loom. This operation is called "beaming," and consists merely of winding the warp on beams or rolls turned by power. This work must be carefully done. The beamer removes rough threads, knots, etc., that were not removed during the operation of warping. In most establishments using the horizontal warping mill the warper beams the warps, but in a few plants this work is done by another operative, called a "beamer."

The same process of warping is followed in the Swiss warping mills. A special beaming frame must be used for these mills. The warping mill, which is considerably smaller than the horizontal mill, is lifted from its frame, carried to the beaming frame, the warp wound on the beam, and the mill placed back in its frame. Wherever the Swiss mill is used beamers are employed.

Another style of warper is the direct-warping machine, a compact and simple machine on which warps for ribbon looms are wound. In

this style of warper the warp is wound directly upon the warp beam.

The hand warper is little used in this country at the present time. In Paterson some are installed in the homes of Germans and Swiss and are operated by the housewife.

The horizontal warping mill can, as a rule, be operated more economically by men than by women. Practically in no case can it be operated satisfactorily by a child. The work of beaming, which is difficult and heavy, must be done by the horizontal warper. A man, because of his greater physical power, is therefore able to turn out more work than a woman and, although men command 50 per cent higher wages, their labor is considered cheaper, and men are more highly skilled and competent.

The work involves constant standing, with the weight of the body resting mainly on one foot on the lever while the mill is turning. Frequently the operator can lean back against some object which gives oportunity for rest. Horizontal warping is a highly skilled occupation.

The horizontal warping mill is used largely in New Jersey, but in Pennsylvania the Swiss warping mill is preferred because women and girls can be more advantageously employed upon it. The direct warper, which is used only in ribbon mills, is of simple mechanism and girls under 16 as well as women can operate it.

TWISTING-IN.

Twisting-in is preceded by the operation of drawing-in, which consists of drawing the ends of the threads through the eyes of the harness and the reeds of the loom, a process not unlike that of threading large needles. After the drawing-in process is completed, the harness is hung in the loom, and the beam or roll on which the warp is wound is placed in the back of the loom. The ends of the new warp are attached or twisted to the ends which were entered into the harness and reed, or are joined to the ends of the old warp, if that has not been entirely woven and consists of the same number of threads. The operation of twisting-in consists of joining the ends together in their proper order by deftly rolling them between the finger tips.

The twister-in, if he is working on a broad-goods loom, sits in the frame of the loom; if it is a ribbon loom he reaches over the harness in a cramped and uncomfortable position. In New Jersey the work was considered unsuited to women, but in Pennsylvania a number were found employed in it. It is regarded as a highly skilled occupation.

WEAVING.

The general design of a loom is too familiar to need explanation. The weaver's work consists largely of piecing up broken ends of warp threads and drawing them into their places through the harness and reed, filling shuttles with new quills and placing them in the loom as required, taking off cloth, etc. The strain of the work varies with the kind of silk being woven and the number of looms a weaver is expected to look after. In the Paterson mills at the time of this investigation broad-silk weavers never tended more than two looms each, even when weaving the plainest goods; the silks woven there were plain, fancy, and figured goods. The products of the Pennsylvania mills were largely plain silks, and a large proportion of the broad-silk weavers looked after three or even four looms.

In ribbon weaving the operative tends a single loom on which from 6 to 100 ribbons are woven at one time. The duties of a ribbon weaver are of the same nature as those of a broad-silk weaver, but they are greater and more arduous. There are a greater number of shuttles to keep filled with quills, a greater number of harnesses to adjust and warp threads to piece together, and in many cases more mechanism to keep in order.

CLOTH PICKING.

This consists of a careful examination of the cloth and the removal of rough ends, loose threads, etc., so that the goods may be perfectly smooth and free from imperfections. Stains in the fabrics, such as grease spots or dirt, must also be removed. This is considered a skilled occupation. The goods are then put through a finishing process, and pressed on hot rolls to remove creases and to give a luster or gloss to the silk.

MISCELLANEOUS OCCUPATIONS.

There are a number of occupations in a silk mill which do not form a direct part of the process of making the goods. Bobbins must be brought to the winders and spinners, loom fixers must keep the looms in order, silk goods must be folded, measured, and wrapped, ribbons must be "blocked" or wound on cardboard cylinders, their ends must be pinned down and labels affixed to the cylinders, etc. Also there are, of course, a number of supervisory positions. The superintendens and managers of the silk mills visited were always men, but those in charge of a room or a division were in the Paterson mills mostly men and in the Pennsylvania mills chiefly young women.

CHILDREN IN THE SILK INDUSTRY.

It is evident that a number of the processes described make small demands upon the worker for either strength or skill, and in this fact lies the importance of the child in the manufacture of silk. Almost from its beginning in this country this has been one of the leading child-employing industries. In 1905 it ranked third in the actual number of children employed, cotton goods and hosiery and knit goods being, respectively, first and second in this particular, and fourth in the percentage (9.2 per cent) which children formed of the total employees, being exceeded only by cotton, with 12 per cent; glass, with 10.1 per cent; and hosiery and knit goods, with 9.3 per cent.

The work of children, for the most part, is not sharply differentiated from that of adults. There are a few skilled occupations in which children are never found and a few unskilled occupations which are left wholly in their hands; but for the most part, especially among the female workers, there is no clear line of demarcation between the work of those under 16 and those over 16.

The following table shows by sex and by State the occupations of the 2,073 children under 16 for whom information on these points was gained:

EMPLOYEES UNDER 16 YEARS OF AGE IN 13 SELECTED OCCUPATIONS, BY SEX AND STATE.

Occupation.	New Jersey.			Pennsylvania.			Total.
	Male.	Female.	Total.	Male.	Female.	Total.	
Bobbin carriers	73	1	74	75	36	111	185
Doublers	.....	18	18	3	115	118	136
Lacers	43	35	78	.....	121	121	199
Pickers, cloth	.....	29	29	.....	17	17	46
Quillers	.....	27	27	.....	53	53	80
Reelers	13	4	17	33	147	180	197
Spinners	9	12	21	48	267	315	336
Twisters-in	.....	.....	.....	1	.....	1	1
Warpers, horizontal	.....	.....	.....	.....	.....	.....	.....
Weavers, broad-silk	.....	.....	.....	4	43	47	47
Weavers, ribbon	.....	.....	.....	1	2	3	3
Winders, hard-silk	.....	26	26	1	293	294	320
Winders, soft-silk	.....	1	1	1	37	38	39
Other occupations	124	173	297	50	137	187	484
Total	262	326	588	217	1,268	1,485	2,073

Bobbin carrying is the most important of the boys' occupations in both States. The work, which consists simply of carrying or, rather, dragging baskets of empty bobbins to the winders, doublers, or spinners, and carrying the filled bobbins from one machine to another, makes no demands upon the worker in the way of skill or intelligence, and is usually given as a first job to a beginner. The bobbin boy also sweeps the floors and does other odd jobs.

Winding is numerically the most important occupation followed by the girls, but spinning is a close second. Four occupations—doubling, reeling, winding, and spinning—all considerably alike in the kind of work done, employed 920 of the 1,594 girls studied, considerably over half. All have the disadvantage of requiring continuous standing, and in all close attention to the work is required. Reeling, as done in Paterson, requires a good deal of heavy lifting, and hence is given over almost wholly to men and boys. In Pennsylvania, where the lifting is not required, it is almost as completely in the hands of women and girls.

Spinning is probably the hardest of these four occupations, both in the constant moving and stooping involved and in the nervous strain. In Paterson both operatives and employers looked upon spinning as men's work, considering it "much too hard and unhealthful work for women and girls." In Pennsylvania no such opinion prevailed, and over four-fifths (84.5 per cent) of all the spinners studied were women or girls.

HOURS OF LABOR, OVERTIME, AND NIGHT WORK.

In both the New Jersey and Pennsylvania localities where the investigation was carried on the hours of labor were the same, namely, 10 per day, except Saturday, when the mills were operated for only 5 hours. In New Jersey working hours for children under 16 were limited to 55 a week, while in Pennsylvania the law provided that "no minor under 16, and no female, shall be employed in any establishment for a longer period than 60 hours in any one week, nor for a longer period than 12 hours in any one day." Thus for adults in New Jersey, and for both children and adults in Pennsylvania, the working week, established by custom and the efforts of the employees, was distinctly shorter than that permitted by law.

Fifty-five hours a week represented full-time employment, but many of the workers were employed somewhat less than full time. The following table gives the average weekly hours actually worked, as shown by the pay-roll records:

AVERAGE HOURS AND PER CENT OF FULL TIME ACTUALLY WORKED IN A REPRESENTATIVE WEEK.

Sex and age groups.	New Jersey.		Pennsylvania.	
	Average hours.	Per cent of full time.	Average hours.	Per cent of full time.
Males under 16 years	48.0	87.2	46.9	85.3
Females under 16 years	49.8	90.5	47.2	85.8

Two facts are apparent from this table: That the average hours approached the standard full time more closely in New Jersey than in Pennsylvania, and that in both States the average hours actually worked by the girls were longer than those worked by the boys, the difference in this respect being greatest in New Jersey.

The question of overtime was of little importance during the period when this investigation was being conducted, since the depression of 1907–8 was beginning to make itself felt when the investigators were at work in Paterson and was in full force when the Pennsylvania data were being gathered. None of the mills investigated were regularly working more than the legal number of hours.

In regard to night work the two localities differed. Not one of the 138 silk mills in Paterson was operated at night—that is, with a special night force. The law forbade without a single exception the employment of women and children in silk mills after 6 p. m., and the sentiment of operatives and manufacturers alike was against night work. In Pennsylvania in 7 of the 36 mills visited night as well as day work was the rule. In these 7 mills 40 men and 51 women and 1 boy were at work at night. These numbers represent probably not more than 10 per cent of those employed at night in these mills under normal business conditions.

EARNINGS.

In the silk industry, as in most others, there was considerable variation between the rates of pay and the actual earnings. The following table groups the workers under 16 by the amounts actually earned during a specified pay-roll period:

NUMBER AND PER CENT OF EMPLOYEES UNDER 16 EARNING EACH CLASSIFIED WEEKLY AMOUNT IN SILK MILLS INVESTIGATED, BY SEX AND STATE.

Classified weekly earnings.	New Jersey.				Pennsylvania.			
	Males.		Females.		Males.		Females.	
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
Under $2	31	13.2	26	9.2	25	12.1	301	31.4
$2 to $2.99	25	10.6	42	14.8	89	43.0	379	30.5
$3 to $3.99	83	35.2	82	29.0	64	30.9	313	25.1
$4 to $4.99	64	27.1	60	21.2	21	10.2	117	9.4
$5 to $5.99	24	10.2	37	13.1	3	1.4	26	2.1
$6 to $6.99	5	2.1	18	6.4	.....	.....	11	.9
$7 to $7.99	2	.8	10	3.5	1	.5	5	.4
$8 to $8.99	2	.8	7	2.5	3	1.4	1	.1
$9 to $9.99	.....	.....	1	.3	.....	.....	1	.1
$10 to $10.99	.....	.....	.....	.....	.....	.....	.....	.....
$11 to $11.99	.....	.....	.....	.....	1	.5	.....	.....
Total	236	100.0	283	100.0	207	100.0	1,244	100.0

The work done in the mills of the two States is so different that the above earnings can not fairly be compared as between States. It will be noticed, however, that the relation between the earnings of the sexes differs, the level of the girls' wages being higher than that of the boys in New Jersey and lower in Pennsylvania. Whether any reason for this difference exists beyond the fact that there were fewer industrial openings for girls in the Pennsylvania towns visited than in Paterson can not be stated. Earnings in both States are low. In New Jersey the largest group, both of the boys and of the girls, was composed of those earning from $3 to $4; in Pennsylvania the largest group of boys earned from $2 to $3, while the largest group of girls earned under $2.

The actual earnings may differ considerably from the accepted rates of pay, owing to failure to work full time or in the other direction, to working overtime, or for other reasons. For 305 boys and 1,284 girls full data were obtained as to occupation, regular full time (55 hours per week) rates of pay, and actual earnings. These facts are shown in the following table:

AVERAGE ACTUAL AND AVERAGE FULL-TIME EARNINGS OF EMPLOYEES UNDER 16, BY OCCUPATION AND SEX.

New Jersey.

Occupation.	Males.			Females.		
	Number.	Average actual earnings.	Average full-time rate.	Number.	Average actual earnings.	Average full-time rate.
Bobbin carriers	73	$3.34	$3.80	1	$2.50	$4.62
Doublers				18	5.15	5.67
Lacers	43	2.82	3.69	38	3.41	3.90
Pickers, cloth				29	3.10	3.52
Quillers				27	4.74	5.08
Reelers	13	5.02	5.28	4	4.45	5.14
Spinners	9	6.39	6.27	12	5.77	5.72
Twisters-in						
Weavers, broad-silk						
Weavers, ribbon						
Winders, hard-silk				26	5.34	6.01
Winders, soft-silk				1	7.16	7.64

Pennsylvania.

Bobbin carriers	75	2.75	3.30	36	2.16	2.59
Doublers	3	3.13	3.14	115	2.65	3.01
Lacers				121	1.96	2.64
Pickers, cloth				17	3.56	3.96
Quillers				53	3.30	3.70
Reelers	31	2.97	3.25	147	2.62	3.24
Spinners	68	2.94	3.36	267	2.77	3.35
Twisters-in	1	7.15	7.15			
Weavers, broad-silk	4	5.96	6.58	43	5.19	5.76
Weavers, ribbon	1	11.20	11.20	2	1.00	5.50
Winders, hard-silk	1	3.00	3.00	293	2.47	3.09
Winders, soft-silk	1	2.30	2.83	37	3.40	3.48

In New Jersey the spinners, both girls and boys, had worked a little overtime during the week for which data were taken, and therefore show actual earnings slightly in excess of their full-time rates of pay. In the majority of cases whatever difference existed was in the other direction, and sometimes, as in the cases of the boy lacers in New Jersey and the girl hard-silk winders in Pennsylvania, the discrepancy was considerable.

This table also emphasizes the low level of the possible earnings of girls in the Pennsylvania mills. There are only two occupations in which the full-time rate of pay rises as high as $5 per week, not one in which it reaches $6, and nine in which it falls below $4. Even if the mills should run full time, with no stops or breakages, and if the worker lost no time through illness, accident, or delay in receiving materials, her earnings would still be very strictly limited. The full-time earnings, it may be mentioned, usually represent time rates, the piece-rate method of payment being used but little in the mills investigated, except in the case of weavers, among whom it was common.

ILLEGAL EMPLOYMENT OF CHILDREN.

It is usual to consider at least four forms of the illegal employment of children: Employment under the legal age, employment without the certificates required by law, employment for a greater number of hours per day or per week than is legally permissible, and employment at prohibited times, as at night in States where that is forbidden. As already mentioned, this investigation was conducted during a period of depression, when mills were running slack time or closing altogether, so that the third and fourth forms of illegality, if they existed at all, were so limited in extent as to be negligible. But with the first and second forms the situation was very different. In both of the States investigated the employment of children under 14 was illegal, but in the New Jersey mills 38 and in the Pennsylvania mills 280 children under that age were found at work. For each of these a careful individual investigation was made by the agents of the bureau, to make sure of the exact age and to learn under what conditions the child had gone to work. The situation as to legal requirements and efforts to enforce the law differed somewhat in the two States.

IN NEW JERSEY.

At the time of this investigation a law passed in 1903 was in force which provided that no child under 14 should be employed or permitted to work in any manufacturing establishment, required employers to keep on file specified certificates of age of all minors under 16 employed by them, and limited hours of labor for such minors to 10 a day and 55 a week. This act became effective January, 1904,

and at that date the governor of New Jersey appointed a new chief factory inspector, who was charged to enforce it vigorously. The following table shows the number of children found by the inspectors to be illegally at work in factories in all industries in the State and discharged by order of the chief factory inspector in each year, 1904 to 1908, inclusive:

CHILDREN DISCHARGED FROM FACTORIES IN ALL INDUSTRIES BY ORDER OF THE CHIEF FACTORY INSPECTOR OF NEW JERSEY, 1904 TO 1908.

Year.	Children discharged.	Year.	Children discharged.
1904	397	1907	399
1905	238	1908	195
1906	361		

In the present investigation 38 children under 14 years of age were found at work in 24 silk mills in Paterson. In none of the other establishments were children under 14 found at work. Because of the great difficulty of learning the true age of children and in view of the many cases in which children alleged to be over 14 and in possession of certificates were later found to be under 14, it can not be assumed that these 38 cases cover all the children employed under legal age in these establishments. The following table shows the age, sex, and race distribution of these children:

Race.	Males.			Females.		
	11 years of age.	12 years of age.	13 years of age.	11 years of age.	12 years of age.	13 years of age.
American			3			
Dutch			3			
English			1			
German			1			2
Hebrew						1
Irish		1	3			1
Italian	1		6		1	11
Russian						1
Scotch						2
Total	1	1	17		1	18

The boy of 12 had left school and begun work at 9 years of age, one of the Italian girls of 13 had begun work at 10, one boy and one girl had begun at 11, and nine boys and eight girls had begun at 12. Two of the girls had never attended school and were unable to read or write.

In addition to these, in the course of the family investigation, 28 boys and 25 girls were found who were 14 years of age and over and legally at work in the silk mills at the time of investigation, but who

had been at work for many months illegally under 14 years of age. Their ages at beginning work had ranged from 10 to 13 years.

Children employed without required legal papers.

The New Jersey child-labor law provided that copies of the certificates of birth and other proofs of age, together with copies of affidavits relating to age of children (the originals of which are to be kept on file in the establishments where the children are employed) should be mailed within 24 hours after filing to the factory-inspection department at Trenton. In the Paterson establishments investigated there were employed 936 children under 16. For every one of these copies of the papers relating to age should have been on file in Trenton, but a search of the records there showed that for 471 of them no such papers had been filed.

In 119 silk mills in Paterson investigation was made as to whether the employers were obeying the law as to affidavits and as to keeping a register of all employees under 16. Twenty-nine establishments (24.4 per cent) had affidavits for all children employed, 41 (34.5 per cent) had affidavits for some of the children employed and the remainder had no affidavits for any of their children. Nineteen establishments kept a register of the children employed and 98 did not. (Information on this point was not secured from 2 establishments.)

In these 119 establishments 818 children were employed, 302 of whom (159 boys and 143 girls) were without affidavits of age.

In enforcing the law the factory inspectors were handicapped by its terms. The filing of proofs of age and keeping of registers were not mandatory upon employers; it was merely provided that if they did so such proofs and register should free them from responsibility should any question arise about the child's age. Many manufacturers, especially those who were large employers, took great pains in requiring all children to present affidavits and supporting proofs. In this way they avoided danger of prosecution if a child were really under the legal age. Others were careless, preferring risk of prosecution to the trouble of securing the required papers.

IN PENNSYLVANIA.

At the time of this investigation great confusion existed in Pennsylvania as to what the requirements of the child-labor law really were. In 1905 a law had been passed forbidding employment under 14, requiring strict proof of age and making literacy and physical fitness prerequisites of employment. In October, 1905, a court decision on this law was given to the effect that "the sections of the

law relating to educational and physical requirements and that requiring the issuing of employment certificates were unconstitutional, while the section bearing on the ages of the children was in no wise a violation of the constitution." This decision was upheld upon appeal, and the law of 1905 thus being declared invalid in these respects an earlier statute became effective which required as proof of age only the affidavit of the child's parent or guardian. Much uncertainty existed as to whether or not a certain amount of school attendance was a necessary prerequisite to employment, and as to the precise conditions under which an employment certificate might be issued. The one point which was looked upon as certain was that if an employer had on file an affidavit from the parent or guardian of each child in his employ stating that the child was 14 or "over 14," then no matter what its real age might be, the employer was immune from prosecution. According to the terms of the law the employer must keep such affidavits on file for all children under 16 in his employ, but the affidavit was the property of the child and must be returned to it when it gave up its employment.

Children employed under legal age.

In 10 of the 36 Pennsylvania mills investigated no children under 14 were found. In the remaining 26 mills situated in 17 cities and towns, 280 children under 14 were found at work, their age and sex distribution being as follows:

Age.	Boys	Girls.	Total
10 years of age	.....	2	2
11 years of age	1	6	7
12 years of age	14	35	49
13 years of age	29	193	222
Total	44	236	280

These children do not represent isolated instances of carelessness on the part of employers usually anxious to obey the law. In two establishments they formed 5 per cent of all the children employed, and from this they ran up to 20, 30, and even 50 per cent of the total employees under 16.

Besides the large number of children under 14 years, the legal age, found employed in the mills investigated, a number of children were also found working who were 14 or over at the time of the investigation, and therefore of legal working age, who had been at work in the silk mills from a month to three years before their fourteenth birthday. The total number of such children found who had been illegally employed while under 14 years of age during the year 1907

was 471. These figures indicate how general had been the practice of sending children to work before reaching 14 years of age.[1]

In addition to the 280 children who were working under the legal age, 173 children 14 and 15 years of age were found at work with false affidavits and 187 of the same ages were found working without affidavits of any kind, making a total of 640 children found at work in violation of the law.

The homes of the children at work under the legal age were visited, and in addition to the children employed in the silk mills there were found 118 other children in the same families at work under the legal age. Of these 8 under 14 years of age were at work in industrial establishments other than silk, 80 under 14 were at work in the coal breakers, and 30 under 16 were at work down in the coal mines.

The following table shows by race the number of children illegally employed in the silk mills, together with the number of children in the same families illegally employed in other industries:

NUMBER AND PER CENT OF CHILDREN IN SILK-MILL FAMILIES ILLEGALLY EMPLOYED, BY RACE.

Race.	Children under 16 years of age illegally employed in—						Total illegally employed.	
	Silk mills.					Other industries.		
	Under 14 years of age.	14 and 15 years of age with false affidavits.	14 and 15 years of age without affidavits.	Total.			Number.	Per cent.
				Number.	Per cent.			
American	9	36	11	56	8.8	6	62	8.2
English	7	11	15	33	5.1	4	37	4.9
German	15	14	21	50	7.8	5	55	7.2
Irish	51	38	36	125	19.5	26	151	19.9
Lithuanian	13	1	7	21	3.3	4	25	3.3
Polish	88	34	47	169	26.4	28	197	26.0
Ruthenian	33	2	10	45	7.0	11	56	7.4
Slovak	30	13	17	60	9.4	24	84	11.1
Welsh	21	11	17	49	7.7	5	54	7.1
Other	13	14	5	32	5.0	5	37	4.9
Total	280	174	186	640	100.0	118	758	100.0

In the families represented in the above table there were 1,297 children at work. It will be noticed that more than half of these (58.4 per cent) were illegally employed and that not far from one-third (30.7 per cent) were at work under the legal age.

Children leaving school to go to work.

At the time of this investigation it was matter of common report in Pennsylvania that children were leaving school to go to work under the legal age with great freedom. To test this a special in-

[1] Vol. IV, Silk Industry, p. 101.

quiry was made of every principal and teacher in the public schools of 21 cities and boroughs of Lackawanna and Luzerne Counties—the two counties in which the silk investigation was carried on. The inquiry related only to children who left school under the age of 14 between June, 1907, and June, 1908. It was found that 1,436 children under the age of 14 had left school during the specified period. The causes for leaving were as follows:

To work in coal mines or factories	481
To work in miscellaneous industries	84
To work in domestic service, on farms, etc	214
For other causes than to begin work	657
Total	1,436

In other words, 54.2 per cent of those leaving school under 14 during the given year left for the purpose of beginning work. Some of those who went into farm work or domestic service may not have violated the law, since up to 1908 it was permissible to begin such work at 13. In practically 40 per cent of the cases, however, there was no such exemption. The child-labor laws of Pennsylvania were radically changed in 1909, following the period of the above investigation. Under the new law, in effect January 1, 1910, the old system of employment through affidavits issued by aldermen or justices of the peace was done away with. The new law required that employment certificates showing that children were 14 and could read and write English intelligently should be issued by superintendents or supervising principals of public schools in large places and by principals of schools, or secretaries of the school boards, or by persons deputized by any of these officials to do this work in smaller places. Principals of private or parochial schools might also issue certificates, but must send copies each month to the public-school official in their district who issued certificates. These officials must require proof that the children are 14, either by birth certificates, baptismal certificates, passports, or other religious or other official records of age. Where these were unobtainable, the record of age on school registers might be accepted. Where even these could not be produced, an affidavit might be accepted. Without these certificates no children of 14 and 16 could be employed. The law of 1905, which prohibited the employment of boys under 16 in mines, was repealed by the law of 1909, unintentionally, it was said, and as the law stood boys of 14 and 15 might be employed in the mines.

At the expiration of the first five months' operation of the law an investigation was made by the bureau in seven of the principal communities in Lackawanna and Luzerne Counties for the purpose of

noting the work of the law. Each of the school superintendents was requested to furnish certain information from his records.

RESULTS OF TEACHERS' EXAMINATIONS OF CHILDREN UNDER NEW LAW, JAN. 1 TO MAY 31, 1910, IN LACKAWANNA AND LUZERNE COUNTIES, PA.

Locality.	Number of children who—						
	Were examined for certificates.	Secured certificates.	Did not secure certificates.	Were rejected because—		Had been at work.	Had been at work and were rejected.
				Under 14 years of age.	Unable to read and write English.		
Scranton	2,156	1,711	445	178	267	(1)	(1)
Wilkes-Barre	[2] 791	545	[2] 246	[2] 181	[2] 65	[2] 490	(3)
Pittston	[2] 457	82	[2] 375	50	[2] 325	[2] 425	[2] 375
Dunmore	238	222	16	4	12	16	16
Olyphant	[2] 200	136	[2] 64	(4)	(4)	(1)	(1)
Jessup	[2] 214	114	[2] 100	.....	[2] 100	[2] 100	[2] 100
Avoca	110	85	25	10	15	25	25
Total	4,166	2,895	1,271	[5] 423	[5] 784	(4)	(4)
Per cent	100.0	69.5	30.5	[5] 35.0	[5] 65.0	(4)	(4)

[1] Not reported, but a majority.
[2] Careful estimate of superintendent of schools, where no records were kept excepting of the number who had passed the examinations and secured the certificates.
[3] Not reported, but a large number.
[4] Not reported.
[5] Not including 64; cause of rejection not reported.

The table shows that in the seven cities and boroughs named, 4,166 children presented themselves to the school authorities for examination for the purpose of procuring certificates which would enable them to continue in their employments, if at work, or to secure new positions. Most of those examined had been at work. Of the 4,166 children examined, 2,895, or 69.5 per cent, secured certificates, while 1,271, or 30.5 per cent, were rejected.

The causes for rejection were secured for 1,207 children. It appears that 423 children, or 35 per cent, were rejected because they were under the legal age of 14 years and 784, or 65 per cent, were rejected because they were unable to read and write English as required by law. Most of those rejected had been at work.[1]

SUMMARY OF EMPLOYMENT OF CHILDREN.

The silk industry in the localities investigated employs large numbers of children, especially of girls. The work done by them is for the most part unskilled or semiskilled, is usually light, and presents few occupational risks. It generally, however, requires continuous standing. At the time of the investigation hours rarely exceeded 55 a week, overtime was unusual, and night work rare. The wage level was low, especially in Pennsylvania, where a less skilled grade of work was required. Illegal employment of children was not unknown in New Jersey and was common in Pennsylvania.

[1] Vol. IV, Silk Industry, pp. 130, 131.

WOMEN IN THE SILK INDUSTRY.

The table already given (p. 171) shows that female workers aged 16 and over formed 53.6 per cent in New Jersey and 67.8 per cent in Pennsylvania of the total workers in the mills studied, and the table on page 177 shows how they are distributed among the leading occupations. In Pennsylvania there are only two leading occupations—twisting-in and horizontal warping—followed by women in which girls under 16 are not also found. In New Jersey girls under 16 are not found among the weavers, but in Pennsylvania 45 under that age were engaged in weaving. Nevertheless, as between girls under 16 and those over that age, weaving, like warping, may be regarded as belonging to the older group. Both of these occupations require a skill, and horizontal warping, in addition, requires a degree of strength not usually found among children.

The labor involved in tending a horizontal-warping mill is both heavy and arduous. Men are better qualified for the work than are women, because of greater physical strength and endurance, and for this reason can turn out a greater amount of work. * * * For a number of years only horizontal-warping mills (and a few hand warpers), were in use in silk factories, and only men were employed for the work. In the course of time the men became strongly organized into a union, which was all the stronger because the occupation was skilled and required months of instruction and experience to make the operator proficient. * * * Men are already being replaced by women in this occupation. As a rule mill owners frankly state that they would prefer to have women, not because they are better qualified for the occupation, for they are not, nor because they are really cheaper, even at lower wages, but chiefly because they do not belong to unions and are more tractable. So long as there are women horizontal warpers the manufacturer feels that he has a strong defense against the demands of the men. In six large Paterson factories women only are employed as horizontal warpers.[1]

In weaving it will be noticed that in Pennsylvania women have almost a monopoly of the broad-silk weaving, only 17 males being found in it. In the Paterson broad-silk mills, on the other hand, only 37.9 per cent of the weavers were women. The great bulk of the product of the Pennsylvania mills consists of plain weavers, a considerable portion being of the cheaper grades, while in Paterson much of the product consists of Jacquard and other fancy silks of a very excellent quality. While women can operate the Jacquard looms with success, they are on the whole less efficient than men because of less mechanical ability to make repairs to the looms.

In general, the same criticism is to be made from the standpoint of the employment of women as from that of the employment of children; the occupations of both are apt to demand continuous standing, and not infrequently require much bending and stooping.

[1] Vol. IV, Silk Industry, pp. 39, 40.

HOURS OF LABOR.

As before stated, the usual hours for silk workers, both in Paterson and in Pennsylvania, at the time of the investigation were 55 a week. At that time, owing to the depression of 1907–8, undertime was far more frequent than overtime. The average hours actually worked by adults in the mills investigated were as follows:

	New Jersey.	Pennsylvania.
Males 16 years and over	51.9	48.6
Females 16 years and over	50.3	42.5

It will be seen that for women especially, the hours actually worked fell far short of the normal week.

EARNINGS.

The actual earnings of workers 16 years or over in the mills investigated during a given week were as follows:

Weekly earnings.	New Jersey.				Pennsylvania.			
	Males.		Females.		Males.		Females.	
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
Under $2	50	1.5	93	2.1	25	6.1	353	8.4
$2 to $2.99	39	1.1	77	1.7	23	5.6	492	11.7
$3 to $3.99	43	1.2	131	3.0	40	9.7	746	17.7
$4 to $4.99	86	2.5	233	5.3	45	10.9	948	22.5
$5 to $5.99	109	3.2	379	8.7	24	5.8	447	10.6
$6 to $6.99	114	3.3	717	16.4	27	6.5	368	8.7
$7 to $7.99	159	4.6	795	18.2	27	6.5	334	7.9
$8 to $8.99	210	6.1	327	7.5	24	5.8	218	5.2
$9 to $9.99	242	7.0	303	6.9	24	5.8	154	3.7
$10 to 10.99	216	6.3	296	6.8	17	4.1	94	2.2
$11 to $11.99	240	7.0	205	4.7	15	3.7	34	.8
$12 to $12.99	263	7.6	247	5.7	18	4.4	23	.5
$13 to $13.99	259	7.5	206	4.7	10	2.4	2	(1)
$14 to $14.99	235	6.8	184	4.2	14	3.4	3	.1
$15 to $16.99	454	13.2	124	2.8	48	11.6	2	(1)
$17 to $19.99	509	14.8	53	1.2	27	6.5	.....	.....
$20 to $24.99	203	5.9	4	.1	5	1.2	2	(1)
$25 and over	15	.4	.....	.....	.....	.....	2	(1)
Total	3,446	100.0	4,374	100.0	413	100.0	4,223	100.0

[1] Less than one-tenth of 1 per cent.

It will be seen that there is a much greater difference between the earnings of the sexes among these adult workers than among those under 16. (See ante, p. 186.) In New Jersey 20.8 per cent of the women earned under $6 and 55.4 per cent under $8 a week, as against 9.5 per cent and 17.4 per cent of the men in the same earnings groups, while only 30.2 per cent of the women, against 69.5

per cent of the men, earned $10 or more. In Pennsylvania the disproportion, though still marked, was not so great in the lower-earnings groups, but the wage level for both sexes was lower. Among the women 70.9 per cent earned under $6 and 87.5 per cent earned under $8, against 38.1 per cent and 51.1 per cent of the men in these earnings groups. Only 3.6 per cent of the women earned $10 or more, as against 37.3 per cent of the men.

The difference between the average full-time rate and the average actual earnings is shown for the leading occupations by the following table:

AVERAGE ACTUAL AND AVERAGE FULL-TIME EARNINGS, BY SEX AND OCCUPATION, FOR WORKERS AGED 16 AND OVER.

New Jersey.

Occupation.	Males.			Females.		
	Number.	Average actual earnings.	Average rate per week of 55 hours.	Number.	Average actual earnings.	Average rate per week of 55 hours.
Bobbin carriers	19	$8.98	$4.51			
Doublers				278	$6.41	$7.04
Lacers	6	2.44	3.58	9	5.03	5.67
Pickers, cloth	3	6.72	9.24	318	6.28	6.88
Quillers	1	6.00	6.00	207	5.92	6.32
Reelers	93	6.32	6.77	2	3.00	6.32
Spinners	244	7.24	7.76	6	6.49	6.60
Twisters-in	147	14.77	16.78	6	15.08	15.36
Warpers, horizontal	106	15.74	17.87	144	10.81	11.99
Weavers, broad-silk	1,384	12.38	12.71	845	11.06	11.72
Weavers, ribbon	433	15.52	16.34	394	11.25	13.15
Winders, hard-silk				521	6.67	7.26
Winders, soft-silk				514	7.29	7.98
Total	2,526			3,344		

Pennsylvania.

Bobbin carriers	23	$3.15	$4.79	3	$2.15	$2.81
Doublers	1	3.95	4.02	437	3 65	4 51
Lacers				21	2.44	3 08
Pickers, cloth				119	4 68	5 67
Quillers				126	4 58	4 79
Reelers	5	4.35	4.18	217	3.39	4 24
Spinners	86	3 83	5 72	462	3 72	4 46
Twisters-in	30	11.92	12.10	24	6 97	8 09
Warpers, horizontal	2	11.50	11 50	70	7 05	7.98
Weavers, broad-silk	13	6 11	7.43	1,104	7 01	7 21
Weavers, ribbon	93	10.18	12.38	53	7 29	9 46
Winders, hard-silk				815	3 53	4 60
Winders, soft-silk				165	4 39	5 01
Total	253			3,696		

It will be noticed that only one group, the five male reelers in Pennsylvania, shows actual earnings higher than the full-time rate. One male quiller in New Jersey and two male warpers in Pennsylvania reached the full-time weekly rates, but the remaining groups of male workers and all the groups of female workers fell below the full-time rates; in some instances the discrepancy was considerable.

WORKING CONDITIONS.

The silk mills are not so arranged that workers of different sexes or ages are separated, and consequently the conditions were the same for both women and children. In Paterson 124 of the 138 mills investigated were of brick, stone, concrete, or some combination of these materials, 9 of the remainder being frame, and 5 of brick and frame combined. In Pennsylvania of the 36 investigated 25 were of brick, 1 of concrete, and 10 frame. In Paterson 106, and in Pennsylvania 11 of the mills investigated were more than two stories high. The following tables show the situation in regard to fire escapes:

EMPLOYEES WITH AND WITHOUT FIRE-ESCAPE PROTECTION IN PATERSON, N. J. AND PENNSYLVANIA MILLS.

Paterson, N. J.

Story of building in which employees work.	Number of employees.				Fire-escape protection.	
	Men.	Women.	Children.	Total.	Per cent with.	Per cent without.
First story	2,324	2,534	464	5,322	.....	.....
Second story, with fire escapes	1,158	1,328	150	2,636	59.5	.....
Second story, without fire escapes	741	961	71	1,793	.....	40.5
Third story, with fire escapes	1,288	1,442	136	2,866	76.8	.....
Third story, without fire escapes	330	517	21	868	.....	23.2
Fourth story, with fire escapes	773	540	74	1,387	70.4	.....
Fourth story, without fire escapes	242	331	9	582	.....	29.6
Fifth story, with fire escapes	42	33	11	86	100.0	.....
Total	6,898	7,706	936	15,540	68.2	31.8

Pennsylvania.

First story	328	2,006	891	3,225	.....	.....
Second story, with fire escapes	13	565	187	765	46.5	.....
Second story, without fire escapes	157	589	135	881	.....	53.5
Third story, with fire escapes	16	335	132	483	60.1	.....
Third story, without fire escapes	31	261	28	320	.....	39.9
Fourth story, with fire escapes	22	289	87	398	54.4	.....
Fourth story, without fire escapes	12	297	25	334	.....	45.6
Total	579	4,342	1,485	6,406	51.7	48.3

It appears that in the Paterson mills a total of 3,243 persons, or 31.7 per cent of all employees working above the first story, were working on second, third, and fourth floors without fire-escape protection. In Pennsylvania 48.3 per cent of all employees working above the first floor were without such protection.

LIGHT AND VENTILATION.

Light was usually good in the workrooms, as the work demanded close watching. A few old mills in Paterson required artificial light

during the day, but these were exceptional. Only three mills were found, one in Paterson and two in Pennsylvania, which had any provisions for ventilation other than doors and windows.

A silk mill is as a rule clean. There is no dust or lint or fumes in the air, so the need for special means of ventilation is not so imperative as in other textile mills. There is as a rule sufficient air space for each employee (regarding 250 cubic feet per operative as sufficient), since the frames which the operatives tend occupy so much space that the operatives frequently work at considerable distances from each other. Therefore, if a sufficient number of windows are kept open, the ventilation of a silk factory is ample. The difficulty lies in the fact that as a rule no one person looks after the ventilation of the workroom as a part of his duties. This matter is, according to statements made by the manufacturers, left to the employees to look after in a hit-or-miss sort of way.[1]

WASH ROOMS, TOILETS, ETC.

In both States the factory law required the provision of wash rooms, but in both the general practice was to provide only sinks with running water in the workrooms. It is to the manufacturer's interest that the employees should keep their hands as clean as possible, and usually there was abundant provision of sinks, towels, and soap. No dressing rooms were provided for women in the Paterson mills, but 10 Pennsylvania mills had so-called dressing rooms, "box-like affairs of the dimensions and shape of a telephone booth, without any windows—merely a place in which a girl could change her skirt and shoes in privacy."

Separate toilet accommodations for the sexes were provided in every case with the exception of one broad-silk mill in Paterson. The toilet facilities in 32 mills in Paterson and in 2 in Pennsylvania were deemed by the agent to be insufficient. As a rule, there was not sufficient privacy of approach. In most cases the toilets for males adjoin those for females; there were separate approaches in only 47 of the 138 mills in Paterson and in only 14 of 36 in Pennsylvania.

In Paterson the condition as to odor and cleanliness was bad in 14 establishments, affecting 1,529 employees, only fair in 46 establishments with 5,420 persons, and good in 78 establishments employing 8,591 persons. The bad conditions affected the air of the workrooms, the odor being noticeable in 8 establishments employing 486 persons. In Pennsylvania the air of the workrooms was affected in 2 establishments with 164 persons.[2]

[1] Vol. IV, Silk Industry, pp. 179, 180. [2] Idem, p. 182.

FAMILY CONDITIONS AND SOURCES AND AMOUNT OF FAMILY INCOME.

The names of a certain number of woman and child employees of various ages were taken from the pay rolls of the various mills investigated, visits were made to their homes, and schedules of questions covering the family conditions were filled out. In New Jersey 827 and in Pennsylvania 1,082 such families were visited.

GENERAL CHARACTER OF FAMILIES.

In this industry, as in the manufacture of glass, no distinct type of family could be found. While the silk mill gives employment to adult males as well as to women and children, practically all of the communities included in this investigation furnished to a large extent employment for both boys and men in other important industries. In Paterson 30.5 per cent of the 580 fathers whose occupations were learned were in the silk mills, the remainder being scattered through the skilled and unskilled occupations and the business pursuits of the city. In Pennsylvania, of 877 fathers whose occupation was learned only two were in the silk mills.

Racially the families seemed to reflect the general composition of the community. There was no indication of special racial aptitude drawing the people of a certain race to the silk mill.

COMPOSITION OF FAMILIES; EMPLOYMENT OF MEMBERS.

The 1,909 families studied averaged 6.4 persons and 3.1 wage earners per family. The number of families having members of specified classes was as follows:

	Number of families.	Per cent of families.
Father living with family	1,529	80.1
Mother living with family	1,837	96.2
Having male children 16 years and over	803	42.1
Having female children 16 years and over	1,111	58.2
Having children 14 and 15 years of age	1,258	65.9
Having children under 14 years	1,459	76.4

Of the fathers living with their families, 95.3 per cent, and of the mothers 14.3 per cent were working outside the home and contributing to the family support. Of the sons 16 years of age and over 96.1 per cent, and of the daughters 88.8 per cent were working; so were 89.6 per cent of the children aged 14 and 15 and 9.3 per cent of the children under 14.[1] It is very evident that in these families,

[1] The proportion which children under 14 at work formed of the total children under 14 in the families studied in three other industries was as follows: Cotton, New England families 2.9 per cent, southern families 34.5 per cent; men's clothing, 1.5 per cent; glass industry, 4.1 per cent.

while the employment of mothers outside their home was rare, the employment of children, both boys and girls, was regarded as the proper thing as soon as the law would permit it, or even before. In regard to the work of mothers and of children under 14, the two States present a marked contrast. In New Jersey 22.3 per cent of the mothers but only 3.3 per cent of the children under 14 years were at work, while in Pennsylvania only 8.3 per cent of the mothers but 11.7 per cent of the children under 14 were working.

AMOUNT AND SOURCES OF FAMILY INCOME.

For the total 1,909 families the average net income was $966. This varies according to the members contributing, as shown in the following table:

Average net income per family of families having—	
Father at work	$1,014
Mother at work	747
Male children 16 years of age and over at work	1,192
Female children 16 years of age and over at work	1,101
Children 14 and 15 years of age at work	941
Children under 14 years of age at work	842

The general tendency is for a woman with a family not to go to work outside her home unless driven by necessity, so it is natural that the families with mothers at work should be those with the lowest incomes. The difference is marked, the incomes for these families averaging $95 less than for the next lowest group and $219 less than the average for the whole number of families. The relative prosperity of families having children 16 years of age and over at work is very marked.

The proportion of the net family income contributed by each class of workers was as follows:

PER CENT OF FAMILY INCOME FROM SPECIFIED SOURCES.[1]

	New Jersey.	Pennsylvania.	Total.
Earnings of father	46.3	53.8	50.5
Earnings of mother	26.8	23.1	33.0
Earnings of male children 16 years and over	35.6	38.2	37.0
Earnings of female children 16 years and over	42.2	26.3	33.1
Earnings of children 14 and 15	17.6	16.2	16.6
Earnings of children under 14	11.6	13.4	13.3

[1] These per cents apply in each case only to the incomes of families having wage earners of the specified class.

One of the most striking points in this table is the greater importance to the family of the female wage earner in New Jersey. This does not merely mean that the average incomes were lower in Pennsylvania and that therefore the earnings of mothers and of daughters were relatively more important; the actual earnings were different. The average earnings of mothers at work were in New Jersey

$297, in Pennsylvania $145; for daughters 16 years of age or over the average earnings were, respectively, $504 and $264. On the other hand, the earnings of the male members, while relatively more important in Pennsylvania, were actually almost the same. The average earnings of fathers were in New Jersey $516 and in Pennsylvania $510, while the sons 16 years of age or over averaged in the first State $456 a year and in the second $428. The higher earnings of the women in Paterson are probably due in part to the character of the work done there, in part to the greater opportunities for employment which create a demand for female labor and consequently raise its price, and in part to the greater well-being of the Paterson families studied. In Paterson the average family membership was 5.5 and the average net income $1,050, while in Pennsylvania the average family membership was 7 and the average net income $902. Obviously it was far more possible for the New Jersey than for the Pennsylvania women and girls to refuse to work for wages they considered insufficient, and hence the higher financial standing of their families might be in turn cause and partial consequence of their higher earnings.

EARNINGS AND CONTRIBUTIONS OF CHILDREN 16 YEARS OF AGE AND OVER.

In the case of fathers, mothers, and children under 16, it was taken for granted that their total earnings were contributed to the family support, but in the case of children 16 years of age and over careful inquiry was made as to just what share of their earnings went into the family purse. The following table shows the results of this inquiry:

NUMBER OF FAMILIES WITH CHILDREN 16 YEARS OF AGE AND OVER AT WORK AND PROPORTION OF THEIR EARNINGS CONTRIBUTED TO FAMILY BY SUCH CHILDREN.

Nativity of head of family.	Number of families having—		Per cent of earnings contributed by—	
	Sons 16 years and over at work.	Daughters 16 years and over at work.	Sons 16 years and over.	Daughters 16 years and over.
NEW JERSEY.				
Native born, native parents	26	41	78.5	91.3
Native born, foreign parents	34	55	73.8	96.4
Foreign born	284	440	82.2	95.5
Total	344	536	81.3	95.5
PENNSYLVANIA.				
Native born, native parents	39	80	73.1	92.5
Native born, foreign parents	70	72	86.9	98.2
Foreign born	330	390	89.5	97.4
Total	439	512	87.3	97.1
Total for both States	783	1,048	84.6	96.0

In every group the females contributed a considerably larger proportion of their earnings than the males, but the difference between the sexes is greater in New Jersey than in Pennsylvania. The proportion of earnings contributed by males is larger in the foreign-born than in the native-born families.

FAMILIES WITHOUT CONTRIBUTING FATHERS.

In New Jersey 247 families and in Pennsylvania 205 had no help from fathers. The following table shows the causes of this non-support and also what proportion the families affected by each cause formed of the total group:

NUMBER AND PER CENT OF FAMILIES, BY CONDITION AS TO FATHERS.

Condition as to father.	New Jersey.		Pennsylvania.	
	Number.	Per cent.	Number.	Per cent.
Idle or incapacitated	41	5.0	31	2.9
Deserter or away	36	4.3	23	2.1
Dead	170	20.6	151	14.0
Total noncontributing	247	29.9	205	19.0
At work	580	70.1	877	81.0
Total	827	100.0	1,082	100.0

It will be noticed that death is by far the most important cause for the cessation of the father's contributions, and that idleness, incapacity, and desertion account for relatively few cases of non-contribution.

MARRIED WOMEN AT WORK.

Among the New Jersey families 176 and among the Pennsylvania families 87 were found with mothers gainfully employed outside their homes. The number in each race group and the proportion they form of the families of that race studied are as follows:

NUMBER AND PROPORTION OF FAMILIES WITH MARRIED WOMEN AT WORK, BY RACE AND STATE.

Race.	New Jersey.			Pennsylvania.		
	Number of families studied.	Number having mothers at work.	Per cent having mothers at work.	Number of families studied.	Number having mothers at work.	Per cent having mothers at work.
American	65	12	18.5	93	14	15.1
Dutch	97	4	4.1	.....	.....	.....
English	84	12	14.3	52	8	15.4
German	130	44	29.3	163	15	9.2
Irish	146	23	15.8	277	35	11.0
Italian	198	70	35.3	.....	.....	.....
Lithuanian	.....	.....	.....	41	2	4.9
Polish	.....	.....	.....	215	6	2.8
Slovak	.....	.....	.....	91	3	3.3
Welsh	.....	.....	.....	94	9	9.6
Other	92	11	12.0	108	5	4.7
Total	827	176	21.3	1,082	87	8.0

In general, the proportion of married women at work is for each race distinctly higher in New Jersey than in Pennsylvania, the English being the only race group for which this does not hold true. The groups are too small to justify conclusions as to racial attitudes as to the employment of married women outside their homes, but it is worth noticing both how large the proportion of women so employed is among the Italians and how small it is among the Lithuanians, Slovaks, and Poles.

The following table shows the average earnings of the married women at work, with the average size of the family and the average income with and without the woman's earnings:

AVERAGE SIZE AND INCOME OF FAMILIES OF MARRIED WOMEN AT WORK, BY CONDITION AS TO HUSBAND.

Condition as to husband.	Families.			Annual family income.			Average per capita weekly income excluding earnings of wives.	Families having a per capita weekly income, excluding earnings of wives, of less than $2.	
	Number.	Per cent of total.	Average size.	Earnings of wives.	Excluding earnings of wives.	Total.		Number.	Per cent.
NEW JERSEY.									
Widows	40	27.7	3.9	$286	$469	$755	$2.31	16	40.0
Deserted wives	15	8.5	3.2	434	143	577	.85	12	80.0
Wives of incapacitated husbands	4	2.3	2.8	477	102	579	.72	4	100.0
Wives of idle husbands	1	.6	2.0	457	.....	457	.....	1	100.0
Wives with husbands at work	116	65.9	4.1	276	608	884	2.88	26	22.4
Total	176	100.0	3.9	297	522	819	2.57	59	33.5
PENNSYLVANIA.									
Widows	35	40.2	4.7	162	423	585	1.72	25	71.4
Deserted wives	[1] 12	13.8	4.5	143	342	485	1.46	10	83.3
Wives of incapacitated husbands	3	3.5	6.3	208	360	568	1.09	2	66.7
Wives of idle husbands	4	4.6	6.0	142	409	551	1.31	3	75.0
Wives with husbands at work	33	37.9	6.4	122	628	750	1.90	19	57.6
Total	87	100.0	5.4	145	487	632	1.73	59	67.8

[1] Including 1 divorced wife.

In both States the wives whose husbands are also working have lower average earnings than those of any other group. Another fact of importance as throwing some light on why they are at work is that in both States the average size of the families in which both husband and wife are working is larger than the family of any other class of working wives. No study of the cost of living was made in these communities, but the average per capita incomes given in the above table make it seem probable that the mothers were forced by economic necessity to the outside work.

MARRIED WOMEN AT WORK LIVING IN HOMES OTHER THAN THEIR OWN.

In the two States 26 such women were found, of whom 8 were widows, 10 were deserted wives, 4 had husbands at work, and for 4 data as to the husbands were not secured. The average earnings of these women were $326. Twenty-four of them lived with parents or parents-in-law, one with a child, and one with a sister.

SINGLE WOMEN 16 YEARS OF AGE OR OVER AT WORK.

In the families visited single women 16 years of age or over were found at work to the number of 1,466. The majority of these were decidedly young, the numbers 16, 17, and 18 years of age being, respectively, 297, 243, and 187; in other words, 49.6 per cent were under 19. Only 15.1 per cent were over 24. Six hundred and six, or 41.3 per cent, had begun work before they were 14, and 31.3 per cent had begun at 14. Only 14.5 per cent had worked in more than one industry. Their average earnings were in New Jersey $353 and in Pennsylvania $202. In New Jersey 5.7 per cent and in Pennsylvania 23.3 per cent of the families to which they belonged had per capita earnings of less than $2 a week.

CHILDREN UNDER 16 YEARS OF AGE.

In the 1,909 silk-mill families of which a special study was made there were 4,553 children from 6 to 15 years old. The following table shows their occupation:

NUMBER AND PER CENT OF CHILDREN 6 TO 15 YEARS OF AGE IN SILK-MILL FAMILIES VISITED WHO WERE AT WORK, AT SCHOOL, AND AT HOME, BY AGE GROUPS.

Age group.	New Jersey.							Pennsylvania.						
	Total number.	At work.		At school.		At home.		Total number.	At work.		At school.		At home.	
		Number.	Per cent.	Number.	Per cent.	Number.	Per cent.		Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
6 to 11 years	606	1	0.2	563	92.9	42	6.9	1,523	16	1.1	1,339	87.9	168	11.0
12 and 13 years	288	41	14.2	236	82.0	11	3.8	699	358	51.2	327	46.8	14	2.0
Total, 6 to 13 years	894	42	4.7	799	89.4	53	5.9	2,222	374	16.8	1,666	75.0	182	8.2
14 and 15 years	450	365	81.1	72	16.0	13	2.9	987	923	93.5	49	5.0	15	1.5
Total, 6 to 15 years	1,344	407	30.3	871	64.8	66	4.9	3,209	1,297	40.4	1,715	53.5	197	6.1

The number of children under 12 "at home" depends somewhat upon the accessibility of the school, though other considerations, such as the child's health, need for its help at home, etc., affect the question. It will be noticed that a very much larger proportion of

the New Jersey children 14 and 15 years of age were at school than was the case in Pennsylvania. Even in New Jersey, however, it was the general rule for such children to be at work.

CHILDREN 14 AND 15 YEARS OF AGE AT WORK.

In New Jersey 365 and in Pennsylvania 923 such children were found, their condition as to parents being as follows:

	New Jersey.	Pennsylvania.
Orphans	1	7
Children of widows	54	116
Children of deserted mothers	10	15
Children of incapacitated fathers	12	22
Children of idle fathers	3	7
Children with both parents at work	21	32
Children with fathers only at work	264	725
Total	365	923

These children formed 89.6 per cent of all the children of these ages in the families studied, 81.1 per cent in New Jersey, and 93.5 per cent in Pennsylvania. It will be noticed that in both States by far the greater number of these children are in normal families with fathers at work. In other words, it is not exceptional misfortune which forces them to work, but evidently their employment is looked upon as a perfectly normal matter, a means of increasing the family income which involves neither confession of distress nor loss of social standing. The average per capita incomes of these families, exclusive of the earnings of the children under 16 years of age, were in New Jersey $2.65 and in Pennsylvania $2 a week.

CHILDREN UNDER 14 YEARS OF AGE AT WORK.

In New Jersey 42 children under 14, belonging to 41 families, were found at work. Of these 1 was an orphan, 8 were children of widowed or deserted mothers, 3 had idle or incapacitated fathers, 3 had both parents at work, and 27 had fathers but not mothers working. Two had never attended school and were unable to read or write.

In Pennsylvania 374 children, belonging to 329 families, were found at work under 14. Of these 295, or 78.9 per cent, had fathers but not mothers at work, 7 had both parents at work, and 52 were children of widows. Eleven had incapacitated fathers, 8 had deserted mothers, and in one case the father was idle. Fourteen were unable to read or write. The average family membership was 7.5, and the average gross annual income was $887, of which an average of $117 (13.2 per cent) was earned by the children under 14.

LABOR ORGANIZATIONS IN THE SILK INDUSTRY.

The attitude toward labor organizations of employers in the establishments visited was as follows:

	New Jersey.	Pennsylvania.
Opposed to	70	29
Approve of	11	.....
Indifferent to	50	1
Noncommittal	7	6
Total	138	36

Notwithstanding the general attitude of hostility toward labor unions which this discloses, practically every broad-silk or silk-ribbon mill had one or more labor organizations, but these are practically confined to the male employees. The loom fixers and twisters-in have united and formed a strong union and the male horizontal warpers have formed another. Loom fixing is entirely, and twisting-in very largely, confined to male employees, so that the union of these workers has nothing to fear from female competition, but the case is otherwise with the horizontal warpers.

Women are not usually as efficient as men in horizontal warping, but many employers prefer them precisely because they are not unionized and can be used as a check upon the demands of the organized male warpers. In other industries in which analogous situations have existed the male workers have found it good policy to induce the women to come into the union and make common cause with them, but for some reason they have not adopted these tactics in the silk industry. At one time the men encouraged the female warpers to form a union of their own, but this lasted only a few years, and since then the women have been unorganized. The attitude of the men is in the main hostile to them. One member of the horizontal warpers' union in Paterson thus stated their position:

> We object to females in our organization. The reasons are many. I will mention two. They will not stand for their rights. Second, they work for less money than we do, less per day, and very often less per piece. Our wages are from $3 to $3.30 per day. The majority of female workers receive from $1.50 to $2 a day, some working for less than the foregoing prices and some for more.[1]

Warpers, loom fixers, and twisters-in are the only silk-mill workers who have kept up regular and systematic organization. Weavers have been organized intermittently, but without apparent permanence.

[1] Vol. IV, Silk Industry, p. 331

SUMMARY.

The silk industry employs a large number but a decreasing proportion of children and a large number of women, the proportion which they form of the total employees having increased slightly in the last 30 years. The machinery commonly used has few, if any, dangerous features, and the investigation disclosed no occupational diseases peculiar to the industry. The work done by children was usually light and presented few objectionable features. One drawback to the occupations followed by both women and girls was that for the most part they demanded continuous standing.

Children were employed more numerously and in a greater variety of occupations in the Pennsylvania than in the New Jersey mills visited. Females outnumbered males very markedly, especially in Pennsylvania. For the most part boys and girls alike were engaged in unskilled or at most semiskilled occupations, and the wage level was correspondingly low. Fourteen was the common age for entering the silk mills, but in New Jersey 38 and in Pennsylvania 280 children under this age were found in the mills visited. Practically no instances of illegal overwork were found.

The majority of females over 16 were employed at semiskilled occupations, but there were several skilled trades open to them in which they could earn from $10 to $18 a week, the latter figure being very exceptional. The mills visited in New Jersey were making a finer grade of goods than those produced in the Pennsylvania mills, and as a consequence earnings were distinctly higher. Perhaps also as a consequence, the age level of the female employees was higher in New Jersey, and women seemed much more likely to continue in the mills after marriage; only 80.6 per cent of the Paterson female employees aged 16 years and over were single, against 94.3 per cent of the Pennsylvania employees in the same age group. Labor organizations scarcely existed among the female silk workers at the time of this investigation.

CHAPTER V.—WAGE-EARNING WOMEN IN STORES AND FACTORIES.

This volume, which forms the fifth part of the general report on the condition of woman and child labor, contains the results of an investigation into the wages and cost of living of between 7,000 and 8,000 women employed in stores and factories in seven large cities. The report consists of three parts, a discussion of earnings, qualifications, and living conditions of the whole group of women studied, more detailed descriptions of conditions for each city separately, and statistical tables giving in detail the leading data for each of the women studied. In addition there is a chapter on the living conditions of waitresses in hotels and restaurants, and another on overtime and night work of wage-earning women.

The investigation was confined to women in department and other retail stores and in factories for two reasons:

In the first place the qualifications for employment, while not uniform, are still within such range as to make it possible to reduce both the industrial and home data, as well as the living conditions, to common terms. The waitresses, who are here included, are to some extent an exception, and for that reason have been treated separately so far as their wage and cost of living are concerned. The second reason for limiting the inquiry was that the problems of living, while perhaps no more serious in many respects, were more apparent among this class of wage earners, and as the investigation could not extend over all self-supporting women the office and professional women were excluded.[1]

The investigation was carried on in seven cities, New York, Chicago, Philadelphia, St. Louis, Boston, Minneapolis, and St. Paul. The total number of wage-earning women visited in these cities was 8,475. From 7,893 of them pertinent detailed information was secured. The names of the women visited were obtained partly from employers and partly from canvassing agencies which collected lists of wage-earning women from all districts in which wage earners lived. Such names were collected without reference to age, experience, rank, or wage. When names were secured from employers, agents of the Bureau took the names, addresses, and industrial data from the pay rolls themselves in order to make sure that no undue proportion was included of either the highest or lowest paid classes. For the purposes of this investigation a woman was considered as

[1] Vol. V, Wage-Earning Women in Stores and Factories, pp. 9, 10.

having a home if she was living with relatives who in time of need or temptation could give her financial aid or moral support; and she was considered as being adrift, even though living with relatives, if they could not in case of need give her help of either kind. Thus, a widow supporting herself and her small children would be looked upon as practically without a home, since the family relationship had become for her a liability instead of an asset. In all cases the test was whether the family could be, if needed, a place of refuge for the girl or whether it was simply an added responsibility.

NUMBER AND PROPORTION OF WOMEN STUDIED.

The proportion of women who either had no homes or whose homes were only a responsibility to them varied widely in the different cities studied. The following figures show for each place the number of women whose home environment was learned and the number and proportion of these at home and adrift:

NUMBER AND PER CENT OF WOMEN WAGE EARNERS INTERVIEWED IN SPECIFIED CITIES WHO WERE FOUND TO BE LIVING AT HOME AND NUMBER AND PER CENT WHO WERE WITHOUT HOMES AND ENTIRELY DEPENDENT UPON THEMSELVES, OR "ADRIFT."

Living conditions.	Boston.		Chicago.		Minneapolis and St. Paul.		New York.		Philadelphia.		St. Louis.	
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
Department and other retail stores:												
Women living at home.	285	64.2	236	79.7	162	72.3	360	92.1	326	77.8	304	79.0
Women adrift	159	35.8	60	20.3	62	27.7	31	7.9	93	22.2	81	21.0
Total	444	100.0	296	100.0	224	100.0	391	100.0	419	100.0	385	100.0
Factories, mills, etc.:												
Women living at home.	544	74.7	326	83.6	181	81.5	1,686	87.0	855	82.0	543	78.4
Women adrift	184	25.3	64	16.4	41	18.5	252	13.0	188	18.0	150	21.6
Total	728	100.0	390	100.0	222	100.0	1,938	100.0	1,043	100.0	693	100.0

The proportion of adrift women in New York is markedly smaller than in any of the other cities. Making due allowance for the relative importance of the different cities, it appears, if the above percentages may be taken as applying to working women in stores and factories generally, that in the seven cities approximately 65,000, or 16 per cent of the whole number employed, are without homes.

ECONOMIC STATUS OF WOMEN AT HOME.

The women adrift, however, can not be looked upon as constituting all or even a majority of the self-supporting women at work in stores and factories. The girl or woman living at home and working only

for pin money was scarcely found in this investigation. The majority turned in all their wages to their family; a small proportion kept a part for themselves, and a very small proportion kept all. These proportions varied somewhat in the different cities. In New York 84.3 per cent of the women in stores and 88.1 per cent of those in factories turned in everything they earned to their families, while 3.8 per cent of the store girls and 0.6 per cent of those in factories kept all their earnings. In Chicago 78.7 per cent of the store girls and 81.3 per cent of those in factories gave up all their earnings, and respectively 3.9 per cent and 1.5 per cent kept all. This does not seem to be a matter of race or of age, but of well-established custom. The mother gives back to the girl what she thinks can be spared for clothing, car fare, and incidentals, or perhaps herself does the buying for her daughter, but the latter is not looked upon as having any exclusive right in her earnings.

The custom[1] of turning over to the parents the weekly envelope with its entire contents seems to be taken as a matter of course. When asked: "What does Mary do with her wages?" the mothers would shrug their shoulders, look half reproachful, and answer: "Sure, she gives it all to me. We have a big family to keep." Not infrequently the answer was "The girls support the family. Their father is dead and I can not work."[1]

FACTORS DETERMINING EARNINGS.

The earnings were secured by careful analysis of receipts from wages, commissions if such were paid, bonuses, pay for overtime, etc., deductions being made for all losses from ill health, slack work, or lay offs and the like. The result, therefore, represents not a rate of pay but earnings actually received.

A few at every age were found in the lowest wage groups, but naturally the higher age groups showed the larger proportion of those making fair to good earnings. The following table shows the relation between age and earnings for store and factory girls, both for those at home and those adrift.

[1] This custom seems to prevail in other groups of wage earning women. In the investigation of the cotton industry it was found that the 602 girls of 16 or over in the New England group living at home and working contributed 96.6 per cent of their earnings to the family support, while in the southern group the 886 young women similarly circumstanced turned into the family 89 per cent of their earnings. The study of the garment-making industry shows 1,352 young women of this age group turning in 93.2 per cent of their earnings. In the glass industry 929 women aged 16 and over living at home were contributing 86.4 per cent of their earnings. In the study of the silk industry in New Jersey and Pennsylvania in 1,048 families in which daughters aged 16 and more were at work it was found that they were turning into the family fund 96 per cent of their wages. See Vol. I, Cotton Textile Industry, p. 426; Vol. II, Men's Ready Made Clothing, p. 368; Vol. III, Glass Industry, p. 527; and Vol. IV, Silk Industry, p. 211.

[1] Vol. V, Wage-Earning Women in Stores and Factories, p. 106.

NUMBER AND PER CENT OF FEMALE WAGE EARNERS IN DEPARTMENT AND OTHER RETAIL STORES, FACTORIES, ETC., EARNING EACH CLASSIFIED AMOUNT PER WEEK, BY AGE.

Age.	Total number investigated.	Number reporting earnings.	Number with average weekly earnings of—						Per cent with average weekly earnings of—					
			Under $4	$4 to $5.99	$6 to $7.99	$8 to $9.99	$10 to $11.99	$12 and over.	Under $4	$4 to $5.99	$6 to $7.99	$8 to $9.99	$10 to $11.99	$12 and over.
STORES.														
Living at home:														
Under 16	47	47	35	11	1	.....	.....	.....	74.5	23.4	2.1	.....	.....	.....
16 and 17	202	201	54	118	27	1	1	.....	26.9	58.7	13.4	0.5	0.5	.....
18 to 20	312	311	11	115	145	32	6	2	3.5	37.0	46.6	10.3	1.9	0.7
21 to 24	262	258	4	37	114	64	23	16	1.6	14.3	44.2	24.8	8.9	6.2
25 and over	330	323	4	19	98	88	58	56	1.2	5.9	30.3	27.2	18.0	17.4
Not reported	101	95	2	18	36	19	14	6	2.1	19.0	37.9	20.0	14.7	6.3
Total	1,254	1,235	110	318	421	204	102	80	8.9	25.7	34.1	16.5	8.3	6.5
Not living at home:														
Under 16	3	3	1	2	.....	.....	.....	.....	33.3	66.7	.....	.....	.....	.....
16 and 17	15	14	4	7	3	.....	.....	.....	28.6	50.0	21.4	.....	.....	.....
18 to 20	66	66	1	26	29	9	1	.....	1.5	39.4	44.0	13.6	1.5	.....
21 to 24	86	83	.....	15	37	18	9	4	.....	18.1	44.6	21.7	10.8	4.8
25 and over	261	249	.....	25	94	69	20	41	.....	10.0	37.8	27.7	8.0	16.5
Not reported	13	5	.....	.....	2	.....	2	1	.....	.....	40.0	.....	40.0	20.0
Total	444	420	6	75	165	96	32	46	1.4	17.9	39.3	22.8	7.6	11.0
FACTORIES, ETC.														
Living at home:														
Under 16	180	179	87	80	12	.....	.....	.....	48.6	44.7	6.7	.....	.....	.....
16 and 17	702	687	115	390	151	23	7	1	16.7	56.7	22.0	3.4	1.0	0.2
18 to 20	999	969	50	328	371	157	47	16	5.2	33.8	38.3	16.2	4.8	1.7
21 to 24	618	586	20	119	235	130	57	25	3.4	20.3	40.1	22.2	9.7	4.3
25 and over	590	571	14	72	212	144	75	54	2.5	12.6	37.1	25.2	13.1	9.5
Not reported	351	346	9	92	142	53	34	16	2.6	26.6	41.1	15.3	9.8	4.6
Total	3,440	3,338	295	1,081	1,123	507	220	112	8.8	32.4	33.6	15.2	6.6	3.4
Not living at home:														
Under 16	11	10	7	3	.....	.....	.....	.....	70.0	30.0	.....	.....	.....	.....
16 and 17	63	49	7	24	14	3	1	.....	14.3	49.0	28.6	6.1	2.0	.....
18 to 20	267	219	16	71	84	31	14	3	7.3	32.4	38.3	14.2	6.4	1.4
21 to 24	189	174	11	48	72	34	6	3	6.3	27.6	41.4	19.5	3.5	1.7
25 and over	398	367	25	79	129	83	36	15	6.8	21.5	35.2	22.6	9.8	4.1
Not reported	5	3	.....	.....	2	.....	1	.....	.....	.....	66.7	.....	33.3	.....
Total	933	822	60	225	301	151	58	21	8.0	27.4	36.6	18.4	7.0	2.6

The effect of age upon earnings is very clearly shown here. Among the store girls living at home only 2.1 per cent of those under 16 earned as much as $6 a week, but this sum was reached or passed by 84.1 per cent of those aged 21 to 24, and by 92.9 per cent of those aged 25 or over. Among those not living at home, 15.1 per cent of those aged 18 to 20 earned as much or more than $8 a week, while of those aged 25 and over 52.2 per cent reached or passed $8 a week.

The table also shows a striking correspondence in the percentage of the home and the adrift women who are earning a given wage.

Comparison of the store women 21 years of age and over living at home with the adrift store women 21 years and over discloses the fact that nearly the same proportion in each group, 52.5 per cent of the former and 48.5 per cent of the latter, earn $8 or over. Com-

paring the home women 20 years of age or younger with the adrift women of the same age groups, it appears that only 7.5 per cent of the home women earn $8 or over, while 12 per cent of the adrift women earn that amount, but against this difference should be set the fact that only 20 per cent of all the adrift women are 20 years or under, while 45 per cent of the home women are in that age group.[1]

Experience is another factor affecting wages. The following table shows the average age, length of experience, and earnings of the home and adrift women studied, and also shows for both classes certain data concerning the disposition of their earnings:

COMPARISON OF AGE, EXPERIENCE, EARNINGS, ETC., OF HOME AND ADRIFT STORE AND FACTORY WOMEN, BY CITIES.

[In this table the averages for the seven cities combined are in the case of each item simple averages based on the number reporting in regard to the item in question. Thus, in computing the averages the total numbers of women employed as wage earners in the various industrial groups in the several cities are not considered. These numbers, represented by such figures as are available, are given in detail at the beginning of the chapters relating to the individual cities. New York is reported as employing more women in department and other retail stores than the six other cities combined, while in factories and miscellaneous establishments of the classes included in the investigation New York had 46 per cent of all. Therefore, if an average were computed with each city given an importance corresponding with the total numbers of women reported as employed in the various industries, New York would have a weight approximately equal to the other six cities combined.]

Department and other retail stores.

City and living conditions.	Total women employed in industry in city.	Women included in the investigation.							
		Per cent at home and per cent not at home.	Average age.	Average years' experience in same industry.	Average weekly earnings.	Average weekly amount paid to family.	Per cent paying all earnings to family.	Average weekly amount paid for food, shelter, heat, light, and laundry.	Per cent contributing to needy relatives.
Boston:									
Living at home	5,682	64.2	24.1	5.2	$6.71	$4.83	55.6	.....	.....
Not living at home		35.8	28.6	7.3	8.42	.....	.....	$5.05	17.9
Chicago:									
Living at home	24,585	79.7	22.8	5.4	8.05	6.49	78.7	.....	.....
Not living at home		20.3	29.2	5.6	8.17	.....	.....	4.77	23.6
Minneapolis and St. Paul:									
Living at home	3,201	72.3	22.6	4.3	6.94	4.23	47.9	.....	.....
Not living at home		27.7	23.7	4.9	6.97	.....	.....	3.45	18.2
New York:									
Living at home	60,000	92.1	19.7	3.1	6.00	5.29	84.3	.....	.....
Not living at home		7.9	24.1	4.3	7.13	.....	.....	3.53	20.8
Philadelphia:									
Living at home	10,148	77.8	26.5	7.7	7.51	5.61	56.8	.....	.....
Not living at home		22.2	31.6	9.0	8.19	.....	.....	4.65	24.6
St. Louis:									
Living at home	5,000	79.0	20.8	3.2	6.37	5.20	77.9	.....	.....
Not living at home		21.0	28.0	(2)	7.51			3.98	16.4
Seven cities:									
Living at home	108,616	.....	22.5	4.7	6.88	5.30	.....	.....	.....
Not living at home		.....	28.2	6.7	7.89			4.43	.....

[1] Vol. V, Wage-Earning Women in Stores and Factories, p. 24.
[2] Not reported.

COMPARISON OF AGE, EXPERIENCE, EARNINGS, ETC., OF HOME AND ADRIFT STORE AND FACTORY WOMEN, BY CITIES—Concluded.

Factories, mills, and miscellaneous establishments.

City and living conditions.	Total women employed in industry in city.	Women included in the investigation.							
		Per cent at home and per cent not at home.	Average age.	Average years' experience in same industry.	Average weekly earnings.	Average weekly amount paid to family.	Per cent paying all earnings to family.	Average weekly amount paid for food, shelter, heat, light, and laundry.	Per cent contributing to needy relatives.
Boston:									
Living at home	21,075	74.7	22.6	5.1	$6.47	$5.16	61.7	.....	.....
Not living at home		25.3	29.1	8.5	6.76	.....	.....	$4.18	21.5
Chicago:									
Living at home	42,362	83.6	21.9	5.1	7.28	5.71	81.3	.....	.....
Not living at home		16.4	23.6	4.1	7.23	.....	.....	3.49	15.1
Minneapolis and St. Paul:									
Living at home	11,338	81.5	20.5	3.1	6.41	4.49	53.5	.....	.....
Not living at home		18.5	21.7	4.0	7.17	.....	.....	3.06	18.1
New York:									
Living at home	139,712	87.0	20.0	3.3	6.09	5.64	88.1	.....	.....
Not living at home		13.0	25.0	4.8	6.24	.....	.....	3.30	28.3
Philadelphia:									
Living at home	56,856	82.0	23.5	5.7	6.72	5.40	67.9	.....	.....
Not living at home		18.0	34.1	11.9	6.64	.....	.....	3.67	26.6
St. Louis:									
Living at home	23,163	78.4	20.4	3.9	6.61	5.45	74.9	.....	.....
Not living at home		21.6	26.0	(1)	7.10	.....	.....	3.36	8.0
Seven cities:									
Living at home	294,506	.....	21.1	3.9	6.40	5.46	.....	.....	.....
Not living at home		.....	27.7	7.4	6.78	.....	.....	3.50	.....

[1] Not reported.

It is at once evident that as a group the adrift store women are older and have had more experience than those living at home. For the home women the average age is 22.5 years and the average length of experience 4.7 years, while for the adrift women the average age is 28.2 years and the experience 6.7 years,[1] a difference which seems fully sufficient to account for the difference of $1.01 in the average weekly earnings. The average earnings of the home women are less than those of the older and more experienced adrift women in every city, the difference being greatest as a rule where the differences in age and experience are greatest. Among the home and adrift women of the factory group similar age and experience differences are apparent, though the wage differences are much less. A study of earnings in connection with experience showed that the average earnings for all women having from two to four years' experience (corre-

[1] The difference in age is much greater than the difference in experience, owing to the fact that among the adrift women are the great majority of the widowed, divorced, and deserted women who have been forced into the wage-earning ranks later in life.

sponding in this respect most nearly to the whole group of home women) were $1.22 a week less than for those having from four to six years' experience (corresponding therein most nearly to the whole group of adrift store women).

EARNINGS AND OPPORTUNITIES FOR ADVANCEMENT.

An effort was made to determine for both store and factory women what possibilities of advancement their work offered and what chance the individual worker had of realizing such possibilities.

About 22 per cent of the women studied were in department and other stores, chiefly the former. At the head of the department-store organization are the manager, who engages the buyers and has general supervision of the departments, and the superintendent of employees, who has general charge of the working force. Next in rank to the manager are the real heads of departments, or "buyers." These are men or women who have risen from the ranks; in nearly every case they are graduates from behind the counter. The rank of buyer or assistant buyer is the highest position open to women. Next in rank below these come the saleswomen, who constitute nearly half of all the women employees, and below these are the cash girls, messengers, bundle girls, etc. Twenty six of the largest department stores in Chicago, New York, and Philadelphia, employing all told 35,772 women and girls, furnished pay-roll data showing the occupational status of their female employees, who were found in the different groups in the following proportions: Cash girls, messengers, etc., 13.2 per cent; saleswomen, 46.2 per cent; buyers and assistant buyers, 1.2 per cent; office employees, 17.6 per cent; other employees, 21.8 per cent. It will be seen that the opportunity for reaching the coveted position of buyer or assistant buyer is small.

The table following shows the number and per cent of the women employees earning classified rates of pay weekly in the 26 department stores referred to. The employees are grouped as cash girls (including messengers, inspectors, bundle wrappers, and packers), saleswomen, office employees, and other employees (including buyers and assistant buyers). This table shows not only the rates of pay for the rank and file but the proportion reaching the higher wage groups.

NUMBER AND PER CENT OF FEMALE EMPLOYEES IN DEPARTMENT AND OTHER RETAIL STORES IN NEW YORK, CHICAGO, AND PHILADELPHIA, BY CLASSIFIED WEEKLY RATES OF PAY.

Classified weekly rates of pay.	Cash girls, messengers, inspectors, bundle wrappers, and packers.		Saleswomen.		Office employees.		Other employees (including buyers and assistant buyers).		Total.	
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
Under $3	645	13.7	.....	.....	3	(1)	61	0.7	709	2.0
$3 to $3.99	1,624	34.6	6	(1)	287	4.6	379	4.6	2,296	6.4
$4 to $4.99	1,376	29.3	173	1.1	750	11.9	803	9.8	3,102	8.7
$5 to $5.99	497	10.6	1,033	6.2	1,104	18.5	627	7.6	3,321	9.3
$6 to $6.99	318	6.8	3,562	21.5	1,277	20.3	875	10.7	6,032	16.9
$7 to $7.99	136	2.9	3,050	18.4	1,004	15.9	877	10.7	5,067	14.2
$8 to $8.99	73	1.5	2,355	14.2	648	10.3	880	10.7	3,956	11.1
$9 to $9.99	20	.4	1,534	9.3	345	5.5	803	9.8	2,702	7.5
$10 to $10.99	6	.1	1,475	8.9	297	4.7	760	9.2	2,538	7.1
$11 to $11.99	.....	.....	461	2.8	108	1.7	227	2.8	796	2.2
$12 to $12.99	3	.1	951	5.7	140	2.2	424	5.2	1,518	4.2
$13 to $14.99	.....	.....	605	3.7	112	1.8	319	3.9	1,036	2.9
$15 to $17.99	.....	.....	762	4.6	85	1.4	400	4.9	1,247	3.5
$18 to $19.99	.....	.....	255	1.5	21	.3	129	1.6	405	1.1
$20 to $24.99	.....	.....	200	1.2	29	.5	229	2.8	458	1.3
$25 and over	.....	.....	150	.9	26	.4	413	5.0	589	1.6
Total	4,698	100.0	16,572	100.0	6,296	100.0	8,206	100.0	35,772	100.0

[1] Less than one-tenth of 1 per cent.

Scrutiny of the table will show that 76.1 per cent of all women employees were getting less than $10 a week; the actual average of this group, computed from the detailed data, was $6.13. The rate of pay for 57.5 per cent of all the women employees is less than $8 a week. The experience table above shows that an average of $8 is not reached by any group with an experience of less than 8 years and that 77.5 per cent of all were below this line. The apparent discrepancy is due largely to the fact that deductions for lost time reduce the number of higher-paid employees in the experience table. On the other hand, 7.5 per cent receive $15 a week or over, and 2.9 per cent $20 a week or over. About half of these higher-paid employees were in the saleswomen group. The average rate for all employees is $7.93, for saleswomen only it is $8.84. In the column headed "other employees" it appears that 55.9 per cent have a rate of $8 or more. But in this group are all the workroom employees whose employment is almost wholly seasonal and whose average earnings therefore would fall considerably below the rate of pay.[1]

There is room for considerable advancement without reaching the highest positions. A girl entering a department store is apt to begin as a cash girl at a weekly wage of from $3 to $4, or as a saleswoman at from $3 to $6.

The following table shows the increase of earnings according to experience among 1,391 department and other retail store women, both home and adrift. The data relate to all of the store women

[1] Vol. V, Wage-Earning Women in Stores and Factories, pp. 44, 45.

from whom accurate information could be secured in regard to both earnings and experience.

NUMBER AND PER CENT AND AVERAGE WEEKLY EARNINGS OF WOMEN IN DEPARTMENT AND OTHER RETAIL STORES, CLASSIFIED BY LENGTH OF EXPERIENCE.

Length of experience.	Women reporting both experience and earnings.		Average weekly earnings.
	Number.	Per cent.	
Under 1 year	170	12.2	$4.69
1 year and under 2 years	176	12.6	5.28
2 and under 4 years	327	23.5	6.27
4 and under 6 years	241	17.3	7.40
6 and under 8 years	165	11.9	7.83
8 and under 10 years	105	7.6	9.27
10 and under 12 years	68	4.9	9.81
12 and under 16 years	78	5.6	9.95
16 and under 21 years	39	2.8	13.33
21 and under 30 years	18	1.3	11.55
30 years and over	4	.3	11.38
Total	1,391	100.0	7.28

The average experience of the 1,391 women for whom both experience and earnings were reported was 5.17 years. During the first year the average wage for all is $4.69, the second year $5.28, and so on, increasing in 10 years to $9.81, during which time many drop out of the ranks, then changing very little for the next five years. Among the women who remain are the buyers and the exceptionally expert saleswomen, and their salaries bring the average earnings up to $13.33, the highest point, after from 16 to 20 years' experience. * * * After 20 years' experience the earning power apparently begins to wane, and during the next decade the average earnings decrease to $11.55, and after 30 years still lower. * * * Four and four-tenths per cent of the department-store women reporting experience and earnings had become buyers or assistant buyers or saleswomen of the highest class, at salaries ranging up to $50 a week.[1]

In the factories the highest position to which a woman may aspire is that of forewoman, which is reached by progressive stages, beginning possibly with that of floor or errand girl, but usually as operative. Of all the women visited engaged in this class of work only 2 per cent were found to be forewomen and assistant forewomen. The average age of these was 28½ years, average weekly earnings $10.32, and average experience 10 years.

The table following shows the variation of earnings according to experience in this class of workers, both home and adrift.

[1] Vol. V, Wage-Earning Women in Stores and Factories, pp. 42, 43.

NUMBER, PER CENT, AND AVERAGE WEEKLY EARNINGS OF WOMEN IN FACTORIES, MILLS, AND MISCELLANEOUS INDUSTRIES, CLASSIFIED BY LENGTH OF EXPERIENCE.

Length of experience.	Women reporting both experience and earnings.		Average weekly earnings.
	Number.	Per cent.	
Under 1 year	575	16.8	$4.62
1 year and under 2 years	475	13.9	5.34
2 and under 4 years	935	27.3	6.16
4 and under 6 years	563	16.5	7.03
6 and under 8 years	315	9.2	7.36
8 and under 10 years	175	5.1	7.96
10 and under 12 years	125	3.7	8.48
12 and under 16 years	111	3.2	8.49
16 and under 21 years	79	2.3	8.54
21 and under 30 years	49	1.4	8.08
30 years and over	19	.6	6.52
Total	3,421	100.0	6.28

The average experience of 3,421 women in factories, etc., for whom both experience and earnings were reported was 4.46 years. During the first year the average earnings are $4.62, the second year $5.34, reaching $8.48 after 10 years, and $8.54 in the 16 to 20 year group. For the three groups whose experience ranged from 10 up to 21 years the earnings averaged about $8.50, and these constituted 9.2 per cent of all the factory women reporting as to experience and earnings. These figures, then, indicate what factory employment holds out to the average woman who continues in it for from 10 to 20 years. Beyond that age the outlook is for a constantly decreasing earning power.[1]

A comparison of these data concerning women in stores and women in factories shows that the average earnings of the two classes are approximately the same in the earlier years. The factory worker, however, reaches practically her high level ($8.48) after about 10 years of work, while the store woman, who after the same length of experience reaches $9.81 a week, rises to her maximum, $13.33, after an experience of 16 but under 21 years. Furthermore, individual employees in stores both as buyers and as saleswomen reach far higher rates of pay. Both factory and store women show a loss of earning power after 20 years of experience.

LIVING CONDITIONS.

CLASSIFICATION OF WOMEN ACCORDING TO LIVING CONDITIONS.

In trying to determine the cost of living for the women adrift, it was found advisable to learn first the cost of items which had to be paid for continuously and which did not vary greatly from week to week, such as shelter, heat, light, laundry, and food. Having these

[1] Vol. V, Wage-Earning Women in Stores and Factories, p. 17

it was possible to determine what margin was left for such occasional and variable expenditures as those for clothing, car fare, health, recreation, and the like. Among the girls living at home there was usually no apportionment of their incomes. They turned what they made into the family fund, and got back a living conditioned by the family earnings and the family ideas of what the situation demanded. But among the women adrift where the worker had to decide for herself the relative importance of each item, the budgets varied widely.

Facts concerning manner and cost of living were gathered from 1,607 adrift women employed in stores and factories, including 200 waitresses. As the latter, however, usually received in addition to their money wages part or all of their board, cost of living could not be calculated on the same basis for them as for the others and they were treated as a separate group. For the purpose of studying the living conditions of adrift women, they were arranged in four groups, those keeping house, those living in private families, those living in boarding or lodging houses, and those living in organized boarding houses.

A rather strict definition was put upon the term "keeping house."

This group does not include women renting one room in a lodging house and preparing such meals as they can in that one room, nor those doing light housekeeping in one or two rooms in a private family, but only those renting a house or tenement where they have their own private entrance, and in which they live entirely independently of other people.[1]

The women of the second class are those living in households in which there are not more than three boarders or lodgers; where this number is exceeded the woman is looked upon as being in a regular boarding or lodging house. "Organized boarding houses" are those financed by some social organization, so managed as to offer women board and lodging under good moral and sanitary conditions, at a price which does not bring any profit to the managers. The aim is generally to pay expenses, but this end is seldom attained, and the deficit is made up by the organization which maintains the house.

Of the 1,607 women adrift from whom full data were obtained, 16.6 per cent kept house, 39.6 per cent lived with private families, 33.7 per cent lived in boarding or lodging houses, and 10.1 per cent in organized boarding houses. The latter per cent is unduly large, as a special canvass of organized boarding houses was made in order to compare their conditions with those offered elsewhere. Very few of the women whose names were secured from pay rolls or canvassing agencies lived in such houses.

[1] Vol. V, Wage-Earning Women in Stores and Factories, p. 51.

Among the 267 women who were keeping house were the married women who must earn a living for themselves and their children and were "adrift" because the homes they made were not in any sense an asset.

All of these homes were supported and presided over by women wage earners. Although in a few cases the earnings of a son or a brother were added to the general fund, it was always the woman who was the mainstay of the family.

EARNINGS AND SPECIFIED EXPENDITURES FOR EACH CLASS.

The following table shows the average weekly earnings and the average weekly expenditures for specified items of the worker in each of these four groups:

AVERAGE WEEKLY EARNINGS AND COST OF LIVING (FOOD, SHELTER, HEAT, LIGHT, AND LAUNDRY) FOR WOMEN OTHER THAN WAITRESSES, BY CITIES, AND WAITRESSES IN ALL CITIES.

City.	Women keeping house.		Women living in private families.		Women living in boarding and lodging houses.		Women living in organized boarding houses.	
	Average weekly earnings.	Average weekly cost of living.[1]	Average weekly earnings.	Average weekly cost of living.	Average weekly earnings.	Average weekly cost of living.	Average weekly earnings.	Average weekly cost of living.
Boston	$6.64	$3.78	$6.88	$3.91	$7.42	$5.18	$7.93	$4.56
Chicago[2]	7.75	2.92	6.36	3.09	7.25	3.84	7.63	3.54
Minneapolis and St. Paul	7.23	3.25	6.73	3.02	7.24	3.42	7.11	3.25
New York	6.43	3.08	6.60	3.54	6.00	3.76	6.06	3.29
Philadelphia	6.28	3.45	7.22	3.85	8.16	4.63	.....	.....
St. Louis	6.61	2.46	8.31	3.89	6.74	3.81	7.67	3.45
Total	6.57	3.18	6.78	3.43	7.31	4.24	7.16	3.62
Waitresses, all cities[3]	5.86	3.09	6.01	1.97	5.72	2.44	4.69	1.39

[1] This is the estimated cost for the worker, exclusive of her expenditure for the support of dependents who may constitute a part of the same household.
[2] In making out these averages the women employed in the Chicago stockyards are included.
[3] The earnings and cost of living of waitresses are based on 200 cases; food which is paid for in service is not included.

WOMEN KEEPING HOUSE.

The average weekly earnings of the women keeping house are lower than those of any other group, but this is not a full statement of their economic disadvantages. Over one-sixth of them (17.2 per cent) had from one to four persons entirely dependent upon them for support, while 37.8 per cent more had others partially dependent upon them. Among the women living in private families only 4.7 per cent had persons totally dependent upon them, while 12.3 per cent had persons partially dependent upon them. In the third group 4.1 per cent had others totally dependent upon them and 10.3 per cent had persons partially dependent upon them, while only 14, 8.6 per cent, of the

fourth group had any dependents. The housekeeping group had at once lower earnings and heavier responsibilities than the women in the other groups.

The average earnings of those keeping house are $6.57 and their average expenditures for food, shelter, heat, light, and laundry are $3.18, leaving $3.39 with which to pay all expenses for their dependents and provide clothing, car fare, medical attendance, and the like for themselves. Naturally where there were dependents this meant constant privation and almost unceasing toil.

One of the women visited (a widow with one child) worked in a bookbindery from 8.30 a. m. to 5.30 p. m. As janitress of the building where she lived she had to clean the halls before she went to work. In the evening after she had cooked and eaten her supper and cleaned up her two small rooms, she worked coloring picture postcards at the rate of 15 cents a hundred. She said that she often went to bed too tired to sleep and felt more tired when she got up in the morning than when she went to bed.[1]

For the women who had no dependents the struggle was not so intense, but very few had anything left for amusements after meeting their weekly expenses. Nevertheless, the fact that they were keeping house gave them some opportunities for social intercourse.

Fifty-nine per cent of the women had a sitting room in their homes where friends could be entertained, 25 per cent used the kitchen, and only 16 per cent were forced to use their bedrooms, and sometimes here it was apparently used in preference to the kitchen as being more suitable.[2]

BOARDERS IN PRIVATE FAMILIES.

The women living as boarders in private families were more numerous than any others, 636, or 39.6 per cent, being found in this group. Their average weekly earnings were $6.78, ranging from less than $1.50 to $15 and over, and their average expenditures for board, lodging, heat, light, and laundry were $3.43, the range being from under $1 to $6.50 or over, 3 paying this minimum and 10 the maximum. These women fell into two general groups: Those who lived in poor families and homes at very little cost, and those who sought pleasant families and comfortable homes, paying as much, if not more, than they would in a regular boarding or lodging house. The former were principally foreign-born women living in families of their own nationality who were often friends or relatives. Generally their standard of living was very low, and overcrowding, poor food, and insanitary surroundings were common. The women in the better class of private families, on the other hand, often had very pleasant surroundings, living in homes which were comfortable and well kept, and with people of education and refinement.

[1] Vol. V, Wage-Earning Women in Stores and Factories, pp. 57.
[2] Idem, pp. 58, 59.

As mentioned before, a number of the women in this group were supporting others in whole or in part, but in general these dependents were living elsewhere. When the woman had made her weekly contribution her responsibilities ceased; she did not as a rule have the personal care of her dependents which so greatly increased the work of the housekeeping woman.

In private families the girl does not necessarily share in the social life of the family, but the chances are very great that she will do so, especially in the poorer homes. Here the lodger or boarder often becomes practically a member of the family, using all the rooms in common with the family, almost always sharing a room with someone else, and in some extreme cases occupying a room with the landlady and her husband. In these families the landlady is very apt to exercise a certain supervision over the girl, which the latter accepts as a part of the quasi-family arrangement into which she has entered.

WOMEN IN REGULAR BOARDING HOUSES.

The women living in regular boarding and lodging houses numbered 542, or 33.7 per cent of all the adrift women studied. Their weekly earnings ranged from less than $2—there being two women whose earnings did not exceed this amount—to $15 and over, earned by 15 women. The average cost of living was $4.24 a week, but 16 women had an average cost of living under $1.50 a week, which brings down the total average unduly. These 16 women were nearly all foreign-born Slovaks or Galicians, who lived with foreign-born families in the most wretched way. Among the others conditions were better, but cost of living was considerably higher. Of those for whom full details were obtained, 31.7 per cent were paying $5 or more a week and over one-eighth (13.8 per cent) paid $6 or more per week.

The number of women in this group having others wholly or partially dependent on them is smaller than in either of the two preceding groups.

But the women in this group for the most part lead an independent life. They are responsible for no one, they are responsible to no one; they come and go and spend their money when and where they will.[1]

The average amount, however, left for them to spend after paying for board, lodging, heat, light, and laundry is only $3.07 a week, and as clothes, car fares, and all such incidentals must come out of this, it is evident that their freedom to do what they will is strictly limited.

[1] Vol. V, Wage-Earning Women in Stores and Factories, pp. 65, 66.

WOMEN IN ORGANIZED BOARDING HOUSES.

The women living in organized boarding houses are the smallest and also the youngest group studied, their average age being 24.1 years; nevertheless their average earnings are next to the highest, being $7.16, only 15 cents below those of the older women in boarding and lodging houses. The cost of living of this group also is next to the highest, but the girls get better accommodations and living of a much higher standard than they could get elsewhere at the same price.

Women employed in stores, factories, and the like were seldom found in these homes, their occupants being mainly office or professional women. The objections to such houses were the familiar ones. In some cases the cost of this way of living was prohibitive, while in others girls who could have afforded it objected to the restrictions usually imposed. Those who could afford it and were willing to submit to the rules obtained some decided advantages.

In the better class of such houses the girls lead a normal and much happier life than in a boarding and lodging house. They have a feeling of comradeship; they have pleasant social life at home; they have a sitting room with a piano, books, and magazines. The girls feel at home there.[1]

EXPENDITURES FOR ALL PURPOSES.

The expenditures for board and lodging could be learned with reasonable accuracy, but it was difficult to get satisfactory data as to the cost of clothing in an investigation necessarily limited as to time. Accordingly an average yearly expenditure for clothing secured by the Women's Educational and Industrial Union of Boston in a research into the requirements of a living wage has been taken as typical. This average was computed from the expenditures of 121 women employed in the pursuits included in this investigation and of the same grade industrially. The average weekly earnings of these women were $7.13 and their average weekly expenditures for clothing $1.38.

If the average weekly earnings and cost of living for both store and factory women in the seven cities, as shown in this investigation, be combined, the results show the weekly average earnings to be $6.67 and the average weekly cost of shelter, food, heat, light, and laundry as $3.80. Assuming the above cost of clothing to be typical, this would leave an average margin of $1.49. Out of this must come car fares, which are often 60 cents a week; contributions to relatives, which average 44 cents; doctors' bills; and all incidental expenses.

[1] Vol. V, Wage Earning Women in Stores and Factories, p. 71.

When it comes to amusements, most of the women have nothing left to spend. Of the 1,568 women who reported on this question, 62 per cent said that they spent no money for pleasure, that it took all their earnings to meet their daily expenses. Thirty-eight per cent reported that they spent something, but only 450, or 22.3 per cent, gave a definite weekly amount. These sums varied from 5 cents to $2, but the average for the 450 was 37 cents.[2]

But many of the women visited were earning less than the average amount, and often the data for individuals show not only that there was nothing for amusements, but that even the margin for clothes was either impossibly small or nonexistent. Usually this has but one meaning: The girls have given the cost of such food as they get for themselves when other demands are not more urgent. In other words, the money for such periodic necessaries as clothing had to be secured by cutting down the amount devoted to continuous necessaries like food or shelter.

MORAL INFLUENCES SURROUNDING DEPARTMENT-STORE EMPLOYEES.

Careful attention was given to the question of whether there were any features of department-store life likely to break down a girl's character, or, rather, whether a deliberate effort in that direction is made. The conclusion is that the requirements of department-store discipline are such that girls of dubious character would be undesirable as saleswomen, and that the general purpose of the stores is to weed out those who resort to illicit methods of increasing their income. There seemed a general recognition among managers that wages paid to beginners and sometimes to experienced saleswomen were not sufficient for a girl to live on honestly, but even more generally they either required their employees to live at home or gave the preference to applicants who claimed to do so. In other words, they apparently preferred that girls should be subsidized by their own families. It is admitted that there are women of lax morals in department stores, but it is maintained that they are in no sense typical of the rank and file.

WAITRESSES IN HOTELS AND RESTAURANTS.

A much larger proportion of the waitresses than of the store and factory women investigated were adrift, over 62 per cent being without homes. Many of those who had homes were married women who worked as one-meal girls, i. e., served only during the noon

[2] Vol. V, Wage-Earning Women in Stores and Factories, p. 74.

meal. The average age of the waitresses living at home was 25.9 years, average experience 4.4 years, and average weekly earnings $5.54; for the adrift waitresses the average age was 26.5 years, average experience 4.2 years, and average earnings $5.71. In addition to these earnings waitresses of both classes received part or all of their food at their place of work and an uncertain and variable amount in tips. Sixty-nine per cent of those living at home turned in all their wages and 20.3 per cent of those adrift contributed an average of $2.09 weekly to needy relatives.

Among the women interviewed the impression seemed to be that the work of a waitress was hard and heavy and that the worker was exposed to unpleasant advances from men, but that making due allowance for the food and tips received returns were much better than from either store or factory work.

SUMMARY.

Some of the more important of the statistical features of the report may be thus summarized:

WOMEN IN DEPARTMENT AND OTHER STORES.

The study deals with 2,159 women and girls employed in department and other retail stores. Of these 486, or approximately 22.5 per cent, the proportion ranging from 7.9 per cent in New York to 35.8 per cent in Boston, were found to be economically adrift, i. e., without homes in the cities in which they worked and entirely dependent upon themselves for support.

The adrift women were of an average age of 28.2 years, had had an average of 6.7 years' experience in retail-store work, and earned a weekly average of $7.89. Of this they spent on an average $1.43 for food, shelter, heat, light, and laundry. Eighty-three, or 20.5 per cent of the 404 from whom reports on this point were received, were either contributing to the support of needy relatives or supporting them wholly.

The women living at home or with relatives had an average age of 22.5 years, an average experience in retail stores of 4.7 years, and earned a weekly average of $6.88. Of this they paid on an average $5.39 into the family fund, either as board or as a contribution. A trifle over two-thirds (68.5 per cent) paid their entire earnings into the family, 26.9 paid in part, and 4.5 per cent kept their entire earnings for themselves.

WOMEN IN MILLS AND FACTORIES.

The investigation included 5,014 women and girls thus employed. Of these 879, or 17.5 per cent, were without homes in the cities in which they worked and were entirely dependent upon themselves. The proportion thus adrift varied from 13 per cent in New York to 25.3 per cent in Boston.

The average age of these adrift women was 27.7 years, their industrial experience 7.4 years, and their average weekly earnings $6.78. For food, shelter, heat, light, and laundry they spent weekly an average of $3.50. Over one-fifth (23.2 per cent) were contributing to the support of needy relatives.

The average age of the women living at home was 21.1 years, their industrial experience 3.9 years, and their average weekly earnings $6.40. Of this they paid an average of $5.46 to their families, either as board or as a contribution. Over three-fourths (77.2 per cent) paid their entire earnings to their families, 21.5 per cent paid over part of their earnings, and 1.4 per cent kept all for themselves.

CHAPTER VI.—THE BEGINNINGS OF CHILD-LABOR LEGISLATION IN CERTAIN STATES.

In the first 75 pages of this report some account is given of the employment of children in the Colonies, the changing attitude of public opinion toward child labor during the nineteenth century, and following this a historical sketch of children in the cotton industry. The remainder of the volume is devoted to a study of child-labor legislation in the North prior to 1860, and in four States of the South since the manufacture of cotton became an important industry there.

CHILD LABOR IN THE COLONIES.

Child labor, sanctioned and sometimes expressly ordered by law, existed in all the Colonies throughout the seventeenth and eighteenth centuries. Three causes are assigned for this state of affairs: The traditional English attitude toward child labor, which the first generation of colonists naturally brought over with them; the crying need for workers in the new country; and a profound belief in the virtue of industry. The English attitude was due to a fear of the burden of pauperism; as early as 1547 laws were enacted providing for the compulsory apprenticing or binding out of children from 5 to 14 years old whose parents were vagrants, on the ground that children "brought up in idleness might be so rooted in it that hardly they may be brought after to good thrift and labor." While the colonists were naturally influenced by this view the problem of pauperism during the early days was not sufficiently grave to make this reason a weighty one. Nevertheless it found expression in the poor laws of many of the Colonies and apparently was held throughout the seventeenth century. New York, Massachusetts, Connecticut, Pennsylvania, Maryland, Virginia, and North Carolina specifically ordered the binding out of poor children, either by their parents or by the overseers of the poor, and in other colonies records are found showing that this was a regular custom.

NEED FOR LABORERS.

The need for laborers in a new country where everything was to be done made children so desirable as workers that efforts were made to import them.

Sir Edwin Sandys proposed to the Virginia Company in 1619 for the "ease and comodiousness" of the tenants, that "100 young per-

sons be sent to their Apprentices." The previous year 100 had been sent by the city of London. He prayed the lord mayor of London to send 100 more from the "superfluous multitude." "Our desire is that we may have them of 12 years old and upward, with allowance of Three pound a pees for their apparell, as was formerly granted. They shall be apprentizes; the boyes till they come to 21 years of age, the girles till like age or till they be marryed." * * * A letter from England stated that 1,400 or 1,500 children went to Virginia in 1627.[1]

The common council of New England in 1622 thought it "convenient to admit young youth * * * to be placed out and bound apprentices," but stipulated that the children were not to be less than 14 years of age. There is little evidence as to the sending over of children under these terms. In 1660, however, John Hull writes in his diary about his return from London with several children to be bound out as apprentices in the Massachusetts Colony.

LEGISLATION ENFORCING CHILD LABOR.

At a very early date in colonial history the need for workers led to child-labor legislation meant to insure that children as well as adults should contribute to the general welfare. The Court of Massachusetts Bay in 1641 ordered that all heads of families should see that their children and servants should be industriously employed "for the working out of hemp and flax, and other needful things for cloathing," and followed this a few years later by an elaborate plan for making sure that the injunction was obeyed. But this was not to be at the expense of the children's education. In 1642 "chosen men" were empowered to take account of the calling and employment of the children, "especially of their ability to read and understand the principles of religion and the capital laws of their country." In 1647 it was ordered in Massachusetts that schoolmasters should be appointed in every town to teach the children. Similar legislation both as to employment and education was adopted in most of the New England colonies.

In Virginia no provision was made for employment of children of the well-to-do, but in 1646 the county commissioners were ordered to select two children from each county, at least 7 or 8 years old, and send them to Jamestown to be employed in the public flax houses to be built there. Later the commissioners were empowered to build houses in each county "for the educating and instructing poor children in the knowledge of spinning, weaving, and other useful occupations and trades."

The scanty material of the eighteenth century shows the same insistence on the employment of children as the preceding century,

[1] Vol. VI, The Beginnings of Child-Labor Legislation in Certain States, ch. 1, p. 11.

with less emphasis, perhaps, on the moral advantages of labor. The textile industries began to open up more avenues of employment for children during this century. In Pennsylvania in 1730 the governor recommended that silk culture be taken up, as it was a "work of which the poorest and feeblest are capable, and children who can be of little other service may here find an employment suitable to their years." In New England the manufacture of linen received a good deal of attention on the double ground that the Colonies would thus be rendered more self-dependent and that the spinning could be done by women and children. Especially was it advantageous because of its employment of children, "thousands at an age when they are scarce capable of doing any other business; and by thus inuring children to an habit of industry we may reasonably hope that this, like other habits, will take a fast hold and render them useful members of society when they grow up."

In 1775 the United Company of Philadelphia for Promoting Manufactures urged a somewhat similar plea, pointing out that manufactures would not draw the country away from agriculture, because if properly conducted "two-thirds of the labor of them will be carried on by those members of society who can not be employed in agriculture, namely, by women and children." In the same year a plan for a similar society was approved in New York City, and in Virginia there was talk of reviving the early laws for employing children.

PUBLIC OPINION CONCERNING CHILD LABOR IN THE NINETEENTH CENTURY.

At the beginning of the last century there was a firmly-rooted opinion that the employment of children was economically necessary and morally desirable. Up to that period the factory system had not been established, and though children might be employed at an early age they worked for the most part under conditions which did not seem to harm them morally or physically. Moreover, provision was made for their education as carefully as for their employment. Child labor in such circumstances was a very different matter from what it became under the factory system, and time had to show the evils of the employment of children under modern conditions before a sentiment could be roused against it.

Public opinion was so far from condemning child labor that in the early days of the tariff controversy one of the strong arguments of the protectionists was the desirability of developing manufactures because they gave work to hitherto idle members of society. Alexander Hamilton pointed out that they rendered women and children "more useful and the latter more early useful than they would otherwise be." One early petition to Congress recites that "more than eight-tenths of the persons employed in the manufactories of the

United States are women and children, by which the latter are earlier trained to industrious habits than they would otherwise be." Another points out that "five or six adults with the aid of children" could manage a cotton factory of 2,000 spindles.

Again and again the fact is harped upon that in the factories "women and children and the infirm" would be able to maintain themselves. And the only answer the free traders found to this chorus of laudation was to deny that manufacture had any monopoly of virtue in this respect, since children could be and were "employed at a very early age in the lighter branches of agriculture."

The earliest attack upon child labor under the factory system was based upon its interference with education. In 1818 the governor of Rhode Island called upon the legislature to provide a plan of education for the factory children. Six years later a resolution was brought in dealing with the same subject, but no action was taken. In 1825 Massachusetts took up the matter and an investigation was ordered into the condition in this respect of children employed by "incorporated manufacturing companies." The report made as a result of this investigation noted that children were employed generally 12 or 13 hours each day, leaving "little opportunity for daily instruction," but nevertheless no action was recommended.

From this time onward the long hours of work required of factory children and the consequent difficulty, if not impossiblity, of their securing even the rudiments of education began to figure prominently in public discussions. Little was said about the effect of early work upon health, but the desirability of shortening hours of work was dwelt upon at length. Organized labor took up the cause with enthusiasm. At this time one of the chief aims of the labor party was to secure a reduction of the inordinately long hours of work which then prevailed, and they were quick to see the value for this purpose of espousing the children's cause. Through the thirties and forties in conventions, in speeches, and in published appeals they demanded education as the right of every child and shorter hours as a prerequisite to securing it. Toward the end of the period a recognition begins to appear of the fact that child labor tends to underbid adult labor and to reduce the standard of living, but up to 1860 the child-labor legislation advocated and indorsed by the labor party dealt almost wholly with restricting hours, and in only a very few cases had to do with age limitation.

To expect that the labor party would have seen all the evils of child labor and would have proposed that it be forbidden by law would be demanding much, especially as public opinion at large did not concern itself with the matter. The country was too largely agricultural for the factory child to be of frequent enough occurrence to gain attention. Moreover, the remains of the old Puritan ideal of the virtue of employment, combined with the earlier age at which

children developed in those days, continued to blind the public to the harm of their employment, provided they were not worked too long. Lastly, the dominant attitude, emphasizing the production of wealth as an element of national power and disregarding the human side of the big mechanism, retarded growth in this line.[1]

After the Civil War the attitude of the labor party changed in this respect. In 1876 the Workingmen's Party, at a union congress in Philadelphia, proposed laws against the employment of children under 14 years of age, and about the same time the platform of the Knights of Labor contained a plank for the prohibition by law of their employment under 15 years of age in workshops, mines, and factories. Since then the public attitude has changed rapidly. There is a pretty general theoretic agreement that the employment of young children is in itself undesirable, and there are few manufacturing States in which there is not at least a nominal prohibition of employment below some fixed age. Hours of labor for children have been very generally limited by law, night work is forbidden in a number of States, and, in a few, proof of physical fitness and of a certain minimum of education is required before a young person may begin work.

CHILDREN IN THE COTTON INDUSTRY.

The extent to which children have been employed in the manufacture of cotton at different times and in different localities is shown by the following table:

AVERAGE NUMBER OF MEN, WOMEN, AND CHILDREN, AND PERCENTAGE OF CHILDREN OF THE TOTAL NUMBER OF WAGE EARNERS, IN COTTON INDUSTRY, 1870 TO 1905.

[Figures from 1870 to 1890 include cotton small wares, which are not included in 1900 and 1905. Figures for 1870 include salaried officials and clerks, who are not included at any of the later dates. Figures for 1905 are taken from special reports of Census Office, Manufactures, 1905, Pt. III, pp. 43, 44, 48, 49; for 1900, from the Twelfth Census, 1900, Vol IX, Manufactures, Pt. III, p. 61; for 1890, idem, p. 54; for 1880, from the Tenth Census, Vol. II, Statistics of Manufactures, Cotton, p. 15; and for 1870, from the Twelfth Census, 1900, Vol. IX, Pt. III, p. 54. Until 1900 the classification of operatives was "Males above 15 years," "Females above 15 years," and "Children." In the Twelfth Census, 1900, however, no attention was paid to that classification, as the same figures are used under the new classification, "Males 16 and over," "Females 16 and over," and "Children under 16," just as if the previous classification coincided with that of 1900.]

State.	1870	1880	1890	1900	1905
Men 16 and over:					
New England	30,203	45,821	63,749	78,217	78,481
Middle States	8,466	8,919	11,540	14,473	13,852
Southern States	3,640	4,633	12,517	40,528	54,577
Western States	481	612	991	1,136	1,189
United States	42,790	59,985	88,837	134,354	148,719
Massachusetts	13,894	22,180	33,101	45,106	43,741
Rhode Island	5,503	8,045	10,507	10,330	10,[illegible]
Pennsylvania	3,859	3,230	4,991	6,737	6,166
North Carolina	258	764	2,793	12,780	15,[illegible]29
South Carolina	289	661	2,849	13,414	18,279
Georgia	1,147	1,853	3,849	7,309	10,851
Alabama	303	384	735	3,152	5,[illegible]19

[1] Vol. VI, The Beginnings of Child Labor Legislation in Certain States, ch. 2, p. 39.

AVERAGE NUMBER OF MEN, WOMEN, AND CHILDREN, AND PERCENTAGE OF CHILDREN OF THE TOTAL NUMBER OF WAGE EARNERS, IN COTTON INDUSTRY, 1870 TO 1905—Concluded.

State.	1870	1880	1890	1900	1905
Women 16 years and over:					
New England	50,805	62,554	73,445	73,258	70,112
Middle States	14,126	13,185	16,240	16,056	15,116
Southern States	4,190	7,587	15,083	32,528	37,685
Western States	516	1,213	1,839	1,867	1,407
United States	69,637	84,539	106,607	123,709	124,711
Massachusetts	24,065	31,496	38,352	41,057	39,054
Rhode Island	8,028	9,199	10,887	9,240	9,377
Pennsylvania	6,097	4,454	6,258	7,119	6,546
North Carolina	916	1,727	3,656	10,364	12,235
South Carolina	508	772	3,070	8,673	10,157
Georgia	1,080	2,951	4,005	6,495	7,873
Alabama	445	631	852	2,743	3,377
Children under 16 years:					
New England	13,767	17,704	10,165	10,819	9,385
Middle States	6,382	6,014	4,021	4,314	2,765
Southern States	2,343	4,097	8,815	24,438	27,538
Western States	450	505	431	295	290
United States	22,942	28,320	23,432	39,866	40,029
Massachusetts	5,753	7,570	4,091	5,923	5,586
Rhode Island	3,134	3,930	3,182	2,253	1,947
Pennsylvania	2,774	2,086	1,417	1,711	1,187
North Carolina	279	741	2,071	7,129	8,212
South Carolina	326	585	2,152	8,110	8,535
Georgia	619	1,411	2,460	4,479	5,406
Alabama	284	433	501	2,437	3,094
Total:					
New England	94,775	125,779	147,359	162,294	155,981
Middle States	28,974	28,118	31,841	34,843	31,871
Southern States	10,173	16,317	36,415	97,494	120,110
Western States	1,447	2,330	3,261	3,298	2,496
United States	135,369	172,544	218,876	297,929	310,458
Massachusetts	43,512	61,246	75,544	92,085	88,033
Rhode Island	16,745	21,174	24,576	21,823	21,917
Pennsylvania	12,730	9,879	12,666	15,567	13,789
North Carolina	1,453	3,232	8,515	30,273	36,356
South Carolina	1,123	2,018	8,071	30,201	37,271
Georgia	2,846	6,215	10,314	18,283	24,130
Alabama	1,082	1,448	2,088	8,332	11,480
Percentage of children of total number of wage earners:					
New England	14.5	14.1	6.9	6.7	6.0
Middle States	22.0	21.4	12.6	12.4	8.7
Southern States	23.0	25.1	24.2	25.0	22.9
Western States	31.1	21.7	13.2	8.9	11.6
United States	16.9	16.4	10.7	13.4	12.9
Massachusetts	13.2	12.4	5.4	6.4	6.3
Rhode Island	18.7	18.6	12.9	10.8	8.9
Pennsylvania	21.8	21.1	11.2	11.0	8.6
North Carolina	19.2	22.9	24.3	23.5	22.6
South Carolina	29.0	29.0	26.7	26.9	23.7
Georgia	21.7	22.7	23.9	24.5	22.4
Alabama	27.5	29.9	24.0	29.2	27.0

It is clear, from a cursory glance at the table, that New England and the Southern States are the important centers of the industry, and that the Western and Middle States are practically so unimportant that for present purposes they may be ignored. In New England, while the total number of operatives has increased since 1880 by over 30,000, the number of children has fallen off about

8,000. Although the industry is growing, it is a declining industry for children. In the South, on the other hand, the actual number of children has increased over sixfold in the quarter century, and relative to the total number of wage earners has lost very little, still remaining nearly one-fourth of the total labor force, 22.9 per cent. Conspicuous is the sharp fall in the number of children employed in New England and the Middle States between 1880 and 1890, when labor legislation became effective in those localities.[1] In the South up to 1900, in the absence of child-labor legislation or legal regulation, there was still one child under 16 years of age in every group of four persons employed. It is evident that the constant tendency of improved machinery in the cotton industry to become heavier and heavier has not caused the employment of children to decline.

There are other differences between the two sections. In New England the industry is old, having been started about 1790; in the South, although there were a few sporadic mills, cotton manufacturing hardly began to play any part in the economic development of the section until reconstruction was already an accomplished fact. Even now the industry is still in its infancy. Again, in New England the labor force consists preponderatingly of foreigners, while the South employs the native white population, much resembling the time, years ago, when the farmers' daughters held sway in the mills of New England. Massachusetts and Rhode Island, the centers of cotton manufacturing in New England, furthermore, are highly industrialized, between 46 and 50 per cent of the employed population being engaged in manufacturing, while the South is still predominantly agricultural and rural. In North and South Carolina and Georgia from 60 to 69 per cent of the working population are engaged in agricultural pursuits and only 9 to 12 per cent in manufacturing.[1] The consequence is that conditions are more or less static in one locality, whereas in the other industrial fermentation is bringing about a change.

These differences make a study of the history of the industry in the two sections particularly worth while. Especially from the point of view of the employment of children it is interesting to see if there is any parallel between the early unregulated industry of New England and the unregulated industry of the South.

While spinning and weaving were done mainly at home, children and women were looked upon as the natural workers in these lines, and when in the end of the eighteenth and beginning of the nineteenth century the progress of invention took these industries from the home to the factory, women and children followed them thither. The employment of young children was then common in both the

[1] Twelfth Census, 1900, Vol. II, Pt. II, p. cxxv.

North and South,[1] but in the latter section so few people of any age were employed in manufacturing that the question of child labor was not important.

In New England children as young as 7 years are known to have been employed in the mills, and advertisements for families with children are common. In these 9 or 10 years is often mentioned as an age for beginners, but there is considerable evidence that children were employed at earlier ages. Two different systems were in use. In one the manufacturer strove to employ families with a large number of children, all of whom were employed as early as possible. This system prevailed very generally in Rhode Island, in Fall River, Mass., and probably in Pennsylvania and New Jersey. Under the other system the manufacturer with a view to securing good moral conditions for his employees established boarding houses under the charge of reputable women and gave the preference to employees who would live in these. Naturally this tended to reduce the number of children employed. Massachusetts and New Hampshire very generally adopted this system.[2]

No really satisfactory data can be secured as to the number of children employed in cotton mills in the early days of the industry. Relatively they were numerous. In 1831 a committee of the Friends of American Industry collected statistics from 795 mills in 12 States. The total number of children under 12 employed in the industry, according to these figures, was 4,691, and the proportion they formed of the total employees ranged from 1.1 per cent in New Hampshire to 40 per cent in Rhode Island. In individual factories the proportion was much higher. Virginia, Maryland, Maine, Massachusetts, Pennsylvania, and Delaware appear in these tables as having no cotton-mill employees under 12 years old; there is evidence that for at least several of these States this showing is incorrect. Practically nothing can be said more definite than that children were very generally employed and that they formed an important part of the working force.

The nature of a child's work in a cotton mill is such that it must necessarily work as long as the adults, and throughout the first half of the last century hours were very long. Working days of from

[1] The Baltimore Gazette of Jan. 4, 1808, announces the establishment of a cotton manufactory in which "a number of boys and girls from 8 to 12 years of age are wanted." In South Carolina the founder of one of the oldest mills in the State urged the employment of Negroes in the mills on the ground that as there was no necessity for educating them the manufacturer could have "their uninterrupted services from the age of 8 years." In 1819 one manufacturer declared that the children in his factory were "chiefly taken from the poor masters of the country towns and from the almshouse in Baltimore."

[2] In the early days there was a difference in the machinery used in the two sections: "In Rhode Island the mule was used for spinning the weft, which meant a male spinner and two assistants, children; whereas in Massachusetts, at Waltham and Lowell, the filling frame, which had been invented by Moody, did not imply the employment of children. Not until after 1830 was mule spinning introduced into Massachusetts."

12 to 14 hours were common. Various attempts to secure a shorter day by legislation were made, but the laws passed were usually ineffective and there was little real limitation of the hours of children's labor until after the Civil War.

Statistics are lacking for any general statements as to children's earnings, but scattered statements are found indicating that they were low. Not infrequently parents contracted for their children's work, making agreements usually for a year, but sometimes for longer periods. In the early part of the century the parent might ignore the child's educational needs altogether. "Some of the parents," reported the selectmen of Northborough in 1825, "contracted with the overseers of the factory to have their children attend school, and some did not." Later, compulsory school laws were passed and though parents might still keep their children at work all year they did not openly contract to do so. The wages earned by the children were paid to the parents.

Objection to the employment of children in the mills brought out replies of much the same character as those heard to-day in Southern States. Widows with children[1] figured as largely in discussions of child labor as they do to-day. "Employers represented that children were unprofitable to them and that they were employed only because parents importuned. * * * A New England manufacturer, for instance, told Horace Mann in 1848 that children under 15 years—they were about 13 per cent of all the operatives—were employed simply from motives of charity." The well-known argument that it is much better for children to be at work acquiring habits of industry than to be running wild on the streets does full duty, and the uplifting effect of cotton-mill life is dwelt on with as much enthusiasm as some writers of the last decade have displayed. For instance, the following sentence, written in 1836, has a decidedly modern ring:

> Hundreds of families * * * originally from places where the general poverty had precluded schools and public worship, brought up illiterate and without religious instruction, and disorderly and vicious in consequence of their lack of regular employment, have been transplanted to these new creations of skill and enterprise and by the ameliorating effects of study, industry, and instruction have been reclaimed, civilized, and Christianized.[2]

CHILD-LABOR LEGISLATION IN THE NORTH BEFORE 1860.

PREVIOUS TO 1830.

Early child-labor legislation suffered from two grave defects. In the first place, owing to the prevailing belief in the virtue of industry

[1] In 1855 the report of the Graniteville Manufacturing Co., South Carolina, characterizes the mill as "truly the home of the poor widow and helpless children, or for a family brought to ruin by a drunken, worthless father."

[2] Vol. VI, The Beginnings of Child-Labor Legislation in Certain States, ch. 2, p. 70.

and the dangers of legal interference with personal rights, such legislation was usually of a timid and tentative character. And, in the second place, the public was entirely unsuspicious of the fact which years of experience have made evident, that a child-labor law, above all others, is not self-enforcing, and that it is of very little value unless provision is made for vigorous and thorough enforcement. Therefore the few laws which were passed concerning the work of minors were too apt to remain dead letters, and on the whole the children probably gained more through the laws regulating employment in general than through those passed expressly for their benefit.

The first three decades of the century passed without any effective legislation of any kind concerning child labor. In Connecticut a law was passed in 1813 declaring that proprietors of manufacturing establishments should cause the children employed by them to be taught "reading, writing, and the first four rules of arithmetic. Due attention should be paid to their morals, and they were required to attend public worship regularly." The law was passed at the instance of a manufacturer who seems himself to have taken almost a paternal care of the children he employed, but outside of his factory there is no evidence that the law ever had the slightest weight.

In Rhode Island in 1818 the governor reminded the legislature of their duty in providing a plan of education for the factory children, but nothing came of his reminder. In 1824 a resolution was presented providing for the education of factory children and setting forth that "there were no schools in most of the factories for the 25,000 children from 7 to 14 years, and the evening and Sunday schools were of little use, because of the long hours the factory children had to work." But this resolution likewise fell through, and more than a decade elapsed before anything was done which affected the employment of children. In Massachusetts in 1825 a joint committee of house and senate was ordered to inquire into the expediency of providing by law for the education of children employed in factories. After an investigation—the first of the long series of investigations into child-labor conditions undertaken by legislative behest—the committee reported that they were not "aware that any interposition by the legislature at present is necessary in this regard," in spite of the fact that they found hours of labor were generally 12 or 13 a day, which left little opportunity for education.

Pennsylvania showed an early interest in the educational side of the question. In 1822 a report on education read in the senate showed that the number of poor children educated in the Philadelphia district had dropped from 5,369 in 1820 to 2,969 in 1821. This decline was attributed to the increase in factories. The report called attention to the gravity of the situation and invited for it "the early and serious attention of the legislature," but no action was taken. In

1824 and again in 1827 a bill was introduced to provide for the education of minors employed in manufacturing establishments, but neither was carried through.

It appears, therefore, that up to 1830 three States—Massachusetts, Rhode Island, and Pennsylvania—had considered legislative regulation of the employment of children in textile factories, for the purpose of securing some educational opportunities for them, but in not a single one had any effective action been taken.

FROM 1830 TO 1860, BY DECADES.

FROM 1830 TO 1840.

Massachusetts took the lead in this period with a law, passed in 1836, providing that no child under 15 might be employed in any manufacturing establishment unless it had attended school at least three months of the year. The penalty for violation was $50, to be recovered by indictment for the use of the common schools in the town where the offending factory was situated. In 1838 an act was passed freeing the employer from liability if he kept a certificate of school attendance for each child under 15 years of age, signed and sworn to by the instructor of the school. The secretary of the board of education reported that the law of 1836 was very generally obeyed, although in some places it had been "uniformly and systematically disregarded." He stated that in one manufacturing town alone 400 children went to school who had never gone before.

In Rhode Island there was considerable agitation during this decade for a 10-hour day, by which, of course, children would have benefited. In 1838 a bill was introduced providing that children under 12 might not be employed unless they had attended school for three months during the preceding year, but it failed to pass. In 1837 Vermont passed a curiously vague and sweeping bill empowering selectmen and overseers of the poor to "examine into the treatment and condition of any minor employed in any manufacturing establishment in their respective towns," giving them large discretionary powers of action if anything objectionable was discovered. There is no evidence that there was any need for this law or that it was ever called into play to any noticeable extent. In New York the desirability of taking some step in regard to the education of factory children was discussed at various times during this decade, both in the assembly and in reports of the superintendent of public schools, but no law was passed.

The agitation in Pennsylvania during this decade was of particular interest because, although no legislation was passed, the feasibility of limiting the age at which children might be employed was brought forward, apparently for the first time. In 1833 a

motion was introduced in the house calling for a report on the question "how far the employment of children under 14 years of age in the manufacturing establishments of this State is detrimental to health," and also suggesting the limitation of hours for such children. The motion was adopted but no report appears to have been made. Nevertheless, the idea that the labor of young children might be intrinsically objectionable—"detrimental to health"—appeared to make an impression. Later in the same year the cotton operatives at Manayunk issued an address appealing for better conditions, claiming that through poverty they were obliged to place their children in factories at an early age with disastrous consequences, though the consequences enumerated spring in the main from lack of educational opportunities. In 1837 the citizens of Pittsburgh held a meeting on the subject of children employed in factories and prepared a memorial to the legislature. Commenting on this the National Laborer exclaims: "It is time that infants, yea *infants*, should be released from that toil and oppression to which the poverty of their parents forces them to yield." In 1838 a select committee, appointed the year before, reported an act concerning the employment of children in factories, which, along with provisions as to hours and schooling, prohibited the employment of children under 10. The committee also dwelt at length in their report on the abuses occurring under the present system. The report closes with a singularly modern note. It is better, they consider—

> That counties should become, in some cases, chargeable with indigent parents than that the health, morals, and future prospects of their offspring should be sacrificed or even jeopardized for the precarious maintenance that is earned by their toil.[1]

The bill failed to pass, and a somewhat similar bill reported in the senate the next year never even reached consideration.

During this decade, to summarize, Massachusetts had provided by law for three months' school attendance of all factory children under 15, Vermont had passed a vague law, in New York legislative action in regard to education had been discussed, and in Pennsylvania the proposition to limit the age of beginning work had been brought forward, though not adopted.

FROM 1840 TO 1850.

The earliest agitation against child labor was directed against the deprivation of educational opportunities it involved. During the thirties interest in education had somewhat diminished, while as the labor movement grew in strength increasing emphasis was laid on the importance of shorter hours for all workers, children and adults

[1] Vol. VI, The Beginnings of Child-Labor Legislation in Certain States, ch. 4, p. 121.

alike. Accordingly child-labor legislation during this decade moved along two main lines, provision of educational opportunities and restriction of hours. The idea brought forward in Pennsylvania during the preceding decade of an age limitation for beginning work also made some headway.

In Massachusetts an act was passed in 1842 forbidding the employment of children under 12 in manufacturing establishments for more than 10 hours a day. In 1849 an educational law was passed which did nothing more than interpret and define the law of 1836.

In Rhode Island the agitation of the thirties resulted in a bill, passed in 1840, providing three months' schooling for children under 12 years in the year before employment. This act was inadvertently repealed in 1845.

In 1842 Connecticut passed a law forbidding the employment of children under 15 unless they attended school three months each year, and also forbidding the employment of children under 14 for more than 10 hours a day in cotton or woolen mills.

Up to this decade New Hampshire had not shown any particular interest in the regulation of child labor, but about 1845 the labor movement became active in this State and petitions for an improvement of conditions began to pour in upon the legislature. In 1846 a law was passed providing that children 12 to 15 must attend school three months out of 12, and children under 12 must attend six months. Certificates of attendance were required and the school committee was to inform of all violations; in 1848 this was weakened by an amendment making the school attendance compulsory only for the year preceding employment. In 1847 a law was passed forbidding the employment of children under 15 for more than 10 hours a day without the written consent of the parents, a provision which rendered the law practically worthless.

Maine proceeded along somewhat the same lines. In 1847 school attendance was required of all children employed in cotton or woolen mills, three months a year for those between 12 and 15, and four months for all under 12. The next year, 1848, a law was passed forbidding the employment of children under 16 by any manufacturing or other corporation for more than 10 hours a day. This provision roused such opposition that in 1849 both house and senate passed a bill to repeal it, which the governor refused to sign. His message, giving his reasons for refusing, replies to the same arguments in favor of unrestricted child labor which are brought forward to-day, and in some respects the governor's attitude was in advance of that which has yet been reached in many communities:

Evidently those in favor of repealing the act of 1848 had contended that the mills could not run on a 10-hour basis, and that many children under 16 would therefore be deprived of the privilege of

affording relief to widowed mothers, etc. The governor met this objection by showing that the State would then permit the mother to be relieved at the incalculable cost of entailing upon thousands of offspring mental and bodily imbecility, poverty, and wretchedness.[1]

New York and New Jersey both made sundry efforts during this decade to secure limitation of hours and an age limit for the employment of children, but neither accomplished anything. Pennsylvania linked the children's cause with that of the workers generally, and in 1848 passed a law making 10 hours the legal day in cotton, woolen, silk, paper, bagging, and flax factories, and forbidding the employment of children under 12 in any cotton, woolen, silk, or flax factory under a penalty of $50. In 1849 the age limit was raised to 13 years and a provision was added that children between 13 and 16 years of age must attend school for three consecutive months each year.

FROM 1850 TO 1860.

During this decade there was comparatively little advance in the child-labor movement. Massachusetts increased the school attendance requirements for children under 12 years from 11 to 18 weeks each year until the age of 12 was reached. Rhode Island in 1853 forbade the employment of children under 12, and in 1854 provided that up to the age of 15 all must attend school three months a year. Connecticut in 1855 fixed 9 years as the age below which children might not lawfully be employed, and the next year raised this limit to 10. In 1855 it was also provided that minors under 18 should not work more than 11 hours a day, but the next year this was increased to 12, with a proviso for a 69-hour week. New Jersey in 1851 established 10 years as the age limit for employment and 10 hours was established as the legal day.

SUMMARY.

By 1860 in the Northern States public opinion had advanced from the early position that child labor was an unmixed benefit to a recognition of the fact that there were at least two sides to the question. The importance of affording educational opportunities to every child was recognized rather generally and the right of the State to interfere in order to secure this was admitted. The right of the State to control the age at which children might begin work and the hours during which they might be employed had also been established in more than one State. It might be said that the theory of the right of the State to protect children was admitted, but as yet very little practical application of that right had been made. Laws for that purpose were relatively few, and as a rule contained little or no provision for enforcement.

[1] Vol. VI, The Beginnings of Child-Labor Legislation in Certain States, p. 103.

CHILD-LABOR LEGISLATION IN FOUR SOUTHERN STATES: NORTH CAROLINA, SOUTH CAROLINA, GEORGIA, AND ALABAMA.

EARLIER LEGISLATION.

The labor of children received very little legislative attention in the South before the beginning of the present century. In 1853 Georgia passed an act providing that "the hours for labor by all white persons under 21 years of age in all cotton, woolen, and other manufacturing establishments in this State shall be, and the same hereby are, settled and fixed at from sunrise to sunset, including the usual and customary time for meals." This permitted long hours, but at least prohibited night work. No provision was made for its enforcement. There is nothing to indicate what conditions led to this enactment and no account of its effect. In 1886–87 Alabama forbade the employment in mines of children under 15. In 1892–93 the employment of women and of boys under 10 in mines was forbidden, and four years later the age limit for boys was raised to 12 years. In 1886–87 it was provided that children under 14 were not to be employed in manufacturing and mechanical establishments more than eight hours a day, but this law was repealed in 1894. In 1889 Georgia limited hours in cotton and woolen factories to 66 a week, and in 1892 South Carolina provided for an 11-hour day and a 60-hour week in cotton and woolen mills.

This sums up the legislation by which children were affected up to 1900. There were a few limitations on hours, but no provisions for detecting or preventing violations. There was no age limit on employment, except Alabama's prohibition of the employment of boys under 12 in mines; neither physical nor educational qualifications were required and night work was permitted for young and old alike.

During the nineties a number of efforts were made in the four leading manufacturing States of the South to secure some effective regulation of child labor, but all failed. In these earlier campaigns the arguments of the opposition varied considerably, according to the importance of the industry in a given State. Thus in Georgia, when a bill to forbid the employment of children under 12 in cotton and woolen mills was introduced in 1887, the cotton industry was relatively so unimportant that none of the arguments against the bill mentioned any possible injury to the industrial interests of the State. Opposition was based on the arguments that children should be trained to habits of industry, that labor did not injure them so much as idleness, and that, moreover, such legislation was a direct infringement upon parental rights. Ten years later the same attitude was still held. The responsibility of employing children should rest with the parents, declared one group of opponents, while by

others: "Child-labor legislation was branded as a 'maudlin' sentimentalism that seeks to throw around children a protection that would harm them. If these children were not allowed to work they would not get educational advantages, but would be exposed to all the contaminating influences of this world."

On the other hand, in the Carolinas, where the industry was growing much more rapidly than in Georgia, the opposition was frankly based on economic reasons. In North Carolina in 1887 the opposition to an age limit for employment laid stress on the fact that if it were adopted "a great many people would be unable to support their families and even if the children did not work their parents would be unable to send them to school." In 1893 it was asserted that "labor laws in Georgia had driven the capitalists to North Carolina, and the inference was that the legislation proposed would in turn drive them out of North Carolina." In 1892 in South Carolina a manufacturer opposing the limitation of hours for women and children on the ground that it would seriously injure the industry declared: "Only women and children could be employed in the spinning department owing to the lowness of the machinery."

LEGISLATION AFTER 1900.

By 1900 the movement against child labor was becoming a force to be reckoned with. The rapid growth of the cotton industry was bringing so many children into the mills that the question could no longer be looked upon as unimportant. In 1880 the cotton mills of North and South Carolina, Georgia, and Alabama employed 3,170 children under 16; in 1900 the number had increased to 22,155, and in individual States the increase had been much more rapid than for the group as a whole. From 1900 onward not a legislative year passed in which some measure for regulating child labor was not brought up in one or more of these four States. The progress of each of these campaigns is given in the report in much detail, but since the course of events was not very different in the four States, South Carolina may be taken as typical.

In 1884 an act forbidding the employment of children under 10 was introduced in the South Carolina Legislature, but failed to become a law. The next attempt of the kind was made in 1889 and the next in 1890, both being unsuccessful. In 1900 a bill forbidding the employment of children under 12 was lost. In 1901 petitions both for and against a child-labor bill were presented, and a bill was introduced forbidding the employment of children under 12. The bill failed to pass, but was warmly debated on both sides:[1]

[1] Vol. VI, The Beginnings of Child-Labor Legislation in Certain States, ch. 5, pp. 152 to 154.

The statements made and opinions expressed at the hearings and in the legislature are such interesting evidence of the public attitude toward child labor at the time that a summary of them is particularly in place. In the main the arguments of the opposition are the same that had been used in New England 50 years before. The differences are simply due to the difference in local conditions. The manufacturer's chief argument was that it was an infant industry bringing wealth into the State, and it should be protected. One manufacturer went so far as to say that the child-labor bill with its 12-year age limit might be called "a bill to discourage manufacturing in South Carolina."[1] The old argument that labor legislation would drive off capital was brought out. The absence of labor legislation in Georgia and Alabama had enticed New England manufacturers, and if they had restrictive laws in South Carolina every outside manufacturer would give them a wide berth.[2] Moreover, the operatives would move to North Carolina and Georgia to obtain employment for their children, so that labor already scarce enough would become still scarcer. It is noticeable at this time that the manufacturers made no attempt to minimize the extent of child labor as later, but freely admitted it. The president of a large mill stated that children between 10 and 12 years old did almost all the spinning in the State, and the passage of the law, in the estimation of some manufacturers, would stop 20 per cent of the machinery.[3] The president of another company said that 30 per cent of the operatives in the spinning room at his mills were children under 12, and from his information he did not doubt that the same proportion would hold for the rest of the State.[4] The pitiable state of education is brought out by the statistics of the Victor Mills, admittedly one of the "show mills" of the State. Out of 124 children 58 could not read, or about 46 per cent. The wording of the president's statement that "all could read except 58"[4] is suggestive. These facts were lost sight of in the more important question of the welfare of the industry. The position that the withdrawal of the children from the industry would stop 30 per cent of the machinery was generally accepted. It resolved itself, as the president said, into the question of whether it was better to protect 30 per cent of labor, the children, or indirectly paralyze all the other interests which were dependent on it. Various statements from physicians—employees of cotton-mill corporations or in villages belonging to mill corporations—that millwork was not injurious to children were read.

In the assembly debates the arguments of the opposition centered around the contention that the operatives did not desire the proposed legislation. The 4,864 operatives' signatures against the bill as contrasted with 1,230 signatures for it was used as proof.[5] The other side, however, took the position that it was not a question of what mill presidents and parents wanted, but whether legislation protecting the children of the State should be passed. The opposition also

[1] Reported in the Charleston News and Courier, Jan. 24, 1901, p. 5.
[2] Idem, Jan. 22, 1901, p. 5.
[3] The Charleston News and Courier, Jan. 22, 1901.
[4] Idem, Jan. 24, 1901.
[5] Speech of a representative from Anderson County reported in the Charleston News and Courier, Feb. 1, 1901.

declared that the bill, besides being class legislation, was an infringement of the rights of parents and a slander on cotton-mill operatives.[1] "Such a law as this," declared one orator, "will be repulsive to operatives in this State in whose veins runs the hot blood of freedom." South Carolina was not a land of paternalism.[2]

Another statesman asserted that the laboring classes in South Carolina were much better without laws than those in New England with laws. "Education is not everything," he concluded, "for virtue is cheap in New England."[3] A report to the News and Courier stated that—

"The members of the general assembly are disposed to heed the advice of such men as [naming 10 well-known millmen] rather than those who are not entirely familiar with the situation. They know that these are the men who have brought millions into the cotton-manufacturing industry in this State; they know that these mills have given interior towns port prices for their cotton; and they know how the mills enhance local products. These men are all South Carolinans to the manor born, and their hearts have been tried, and are as true to their people as those of the agitator, and their views of what is for the ultimate good of the State ought to be as good as those of any agitator or even sincere humanitarian, for who would not say that they do far more for their working classes than do those in most other occupations. * * * The argument is that to turn loose boys 10 and 11 years old without anything to do and without any desire to go to school would be far worse than to let the children acquire habits of industry and thrift. At all events there are very few children under 12 years of age who are employed in cotton factories, and the statements of the mill officers are that they would rather not employ children at all, as it is expensive and unsatisfactory, but it has to be done to help poor families in the mills, and is sometimes due to the misstatements of parents as to the ages of children.[4]

In 1902 a child-labor bill was again defeated, but by only a narrow margin. In 1903 the governor sent in an emphatic message on the subject. "No one can successively controvert," he declared, "the position that this labor of long and constant hours is injurious to the child and therefore affects the citizenship of the future. This being true, the State has a right to come in and say it shall be stopped."

By this time it was becoming apparent that public opinion demanded a child-labor law, and the opposition devoted itself not to preventing but to weakening such legislation. The law as finally passed graduated the age limit of employment from 10 years in 1903 to 12 years in 1905.

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[1] See speech of a representative from Anderson County in the Charleston News and Courier, Feb. 1, 1901.

[2] Idem, Feb. 9, 1901, p. 8.

[3] Speech of the senator from Anderson County in the Charleston News and Courier, Feb. 8, 1901, p. 5.

[4] Jan. 21, 1901, p. 5, c. 1, 2, 8. Also Kohn's pamphlet, The Cotton Mills of South Carolina, republished from the Charleston News and Courier, Columbia, S. C., 1907.

Night work for children under 12 years of age between 8 p. m. and 6 a. m. was forbidden, although children under 12 years of age, whose employment was otherwise permissible, were allowed to make up lost time. An exception was made allowing orphans and the children of a widowed mother or of a totally disabled father to work, in case they were dependent upon their own labor for support. The widow or parent had to furnish an affidavit, indorsed with the approval of the officer before whom it was made, saying they were unable to support the children. Children under the legal age could work during the summer months provided they had attended school four months during the current year and could read and write. Affidavits of age for children under 12 years of age were required to be on file in the office of the employer. Penalties were attached to parents for permitting disqualified children to work. Employers were practically exempt by making only those who "knowingly" employed children contrary to the law subject to a fine.[1]

No means of enforcement were provided.

Mild as was this bill, "a triumph of the principle only of a child-labor bill," it was looked upon as being all that could be expected for a time, and for some years the friends of labor legislation devoted themselves to trying to secure shorter hours. In 1907 a bill was passed providing that beginning January, 1908, 10 hours a day and 60 hours a week should constitute the regular working hours in cotton and woolen mills for all operatives except machinists, engineers, etc. Contracts for longer hours were void.

In 1907 and in 1908 unsuccessful efforts were made to secure factory inspection, but in 1909 this was obtained. The need of such inspection was very generally felt.

The Columbia State pointed out the utter inadequacy of the child-labor law in keeping children under age who were not subject to the exceptions out of the mills. The parents, anxious to secure employment for their children, might give any age they chose for the children and there was no redress. If one mill refused to employ children which it believed to be under age, some other less scrupulous mill would. * * * Inspection of the mills would help enforce the law.[2]

The State commissioner of agriculture, commerce, and industries was to report annually statistical details relating to all departments of labor. He might employ two inspectors in enforcing the provisions of the law. Children under 14 were prohibited from cleaning certain kinds of machinery while in motion, and where children under 14 were employed notices to that effect must be posted.

[1] Vol. VI, The Beginnings of Child-Labor Legislation in Certain States, ch. 5, p. 158.
[2] Idem, p. 164.

The first report of the commissioner, covering the work of 1909, showed that the employment of children under 12 was common. During the year the inspectors had ordered the discharge of 231 children under 12 who were illegally employed, and found 726 others under that age working under the exception of the law. During the summer months 519 certificates were issued to children under 12 allowing them to work until September 1st.

In the three other States the same opposition was met with and much the same results were obtained, though North Carolina and Georgia did not establish any inspection system within the period covered.

The report closes with an analysis and comparison of the child-labor legislation secured in the North before 1860 and in the South by 1909, which is here given in full:[1]

CONCLUSION.

ANALYSIS OF CHILD-LABOR LEGISLATION PRIOR TO 1860.

In order to secure a general idea of the child-labor legislation enacted up to 1860, the laws of the various States have been analyzed and classified under the chief characteristics of such legislation, the age of employment, limitation of hours, and school attendance requirements, in the following tables:

ANALYSIS OF CHILD-LABOR LEGISLATION PRIOR TO 1860.

I. Age of employment.

State and date of law.	Industries affected.	Age limit.	Proof of age.
Massachusetts; no legislation.	.....	.....	
Rhode Island, 1853.....	Manufacturing.....	Children under 12 years not to work.	Not required.
Connecticut:			
1855, ch. 45.....	Manufacturing and mechanical.	Children under 9 years not to work.	Do.
1856, ch. 39.....	.....do.....	Children under 10 years not to work.	Do.
Vermont, 1837, No. 34...	Manufacturing.....	Selectmen had discretionary powers.	
New Hampshire; no legislation.	.....	.....	
Maine; no legislation...	.....	.....	
New York; no legislation.	.....	.....	
New Jersey, 1851.....	Manufacturing.....	Children under 10 years not to work.	Do.
Pennsylvania:			
1848, No. 227.....	Cotton, woolen, silk, flax..	Children under 12 years not to work.	Do.
1849, No. 415.....	Cotton, woolen, silk, paper, bagging, flax.	Children under 13 years not to work.	Do.

[1] Vol. VI, The Beginnings of Child-Labor Legislation in Certain States, ch. 6, p. 207 et seq.

ANALYSIS OF CHILD-LABOR LEGISLATION PRIOR TO 1860—Continued.

II. Limitation of hours for children.

State and date of law.	Industries affected.	Detail of hour limitation.	Enforcement.
Massachusetts, 1842, ch. 40.	Manufacturing	Children under 12 years may not work over 10 hours a day.	Not provided for.
Rhode Island, 1853	do	Children 12 to 15 years may not work over 11 hours. Nightwork after 7.30 p. m. and before 5 a. m. forbidden minors under 18 years, packers excepted.	Do.
Connecticut:			
1842, ch. 28	Cotton and woolen	Children under 14 years may not work over 10 hours a day.	Do.
1855, ch. 46	Manufacturing or mechanical.	Children under 18 years may not work over 11 hours a day.	Do.
1856, ch. 39	do	Children under 18 years may not work over 12 hours a day and 69 a week.	Constables and grand jurors to inquire after violations.
Vermont, 1837, No. 34	Manufacturing	The selectmen had large discretionary powers.	
New Hampshire, 1847, ch. 498.	Manufacturing	Children under 15 years may not work over 10 hours a day without written consent of the parent.	Not provided for.
Maine, 1848, ch. 83	Manufacturing or other corporation.	Children under 16 years may not work over 10 hours a day.	Do.
New York; no legislation apart from the 10-hour day on public works.			
New Jersey, 1851	Manufacturing (Acts of 1852, p. 62).	Minors may not be holden or required to work over 10 hours a day or 60 a week.	Do.
Pennsylvania:			
1848, No. 227	Cotton, woolen, silk, paper, bagging, flax.	Minors may not be holden or required to work over 10 hours a day or 60 a week. Minors above 14 years may be employed more than 10 hours by special contract.	Do.
1849, No. 415	do	Children 13 to 16 years may not work over 10 hours a day.	Do.
1855, No. 501	do	Minors may not work over 60 hours a week.	On complaint; constables to act.
Ohio, 1852	Manufacturing and mechanical.	Women and children under 18 years may not be compelled to work over 10 hours a day. Children under 14 years may not work over 10 hours a day.	Not provided for.

III. School-attendance requirements.

State and date of law.	Industries affected.	Nature of school requirements.	School certificates.	Enforcement.
Massachusetts:				
1836, ch. 245	Manufacturing	Children under 15 years must attend school 3 months out of 12.	Not mentioned	Not provided for.
1836, ch. 207			School certificates not required, but conclusive evidence in case of doubt.	Do.
1849, ch. 220 (repealing act of 1836).	Manufacturing	Children under 15 years must attend school 11 weeks.		Do.
1858, ch. 83	do	Children under 12 years must attend school 18 weeks.		Do.
Rhode Island:				
1849 (repealed in 1844).	do	Children under 12 years must attend school 3 months out of 12.	Not required, but conclusive evidence in case of doubt.	Do.

ANALYSIS OF CHILD-LABOR LEGISLATION PRIOR TO 1860—Concluded.

III. School-attendance requirements—Concluded.

State and date of law.	Industries affected.	Nature of school requirements.	School certificates.	Enforcement.
Rhode Island—Concluded.				
1854	Manufacturing	Children under 15 years must attend school 3 months out of 12.	Not mentioned	Not provided for.
Connecticut, 1842, ch. 28.	All occupations	Children under 15 years must attend school 3 months out of 12.	Not required; but when sworn to by the teacher, sufficient evidence in cases arising under the law.	School visitors.
Vermont, 1837	Manufacturing	The selectmen had large discretionary power.		
New Hampshire:				
1846, ch. 318	do	Children 12 to 15 years must attend school 3 months out of 12; children under 12 years must attend school 6 months out of 12.	Required; must be sworn to by the teacher.	School committees to inform of all violations.
1848, ch. 622 (repealing act of 1846).	Manufacturing	Children 12 to 15 years must attend school 12 weeks out of the year before employment; children under 12 years must attend school 6 months out of the year before employment.	Required; signed by the teacher.	Not provided for
Maine, 1847, ch. 29	Cotton and woolen manufacturing.	Children 12 to 15 years must attend school 3 months out of 12; children under 12 years must attend school 4 months out of 12.	Required; sworn to by the teacher.	Do.
New York; no legislation.				
New Jersey; no legislation.				
Pennsylvania, 1849, No. 415.	Cotton, woolen, silk, paper, bagging, and flax.	Children 13 to 16 years must attend school 3 months consecutively out of 12.	Not mentioned	Do.

As may be seen, prior to 1860 only four States limited the age of employment of children. In the Connecticut and New Jersey laws the age limit was 10 years in all manufacturing establishments and in Connecticut in mechanical establishments also. Twelve years was the limit in Rhode Island in manufacturing establishments. The Pennsylvania law raised the age limit from 12 to 13 years in cotton, woolen, silk, paper, bagging, and flax factories. In none of the States was any proof of age required.

Six States—Maine, New Hampshire, Massachusetts, New Jersey, Pennsylvania, and Ohio—limited the hours of labor to 10 a day for children in manufacturing establishments (in Pennsylvania, in tex-

tile establishments). The ages of the children varied in the different States. Thus, in Massachusetts the law forbade children under 12 years from working over 10 hours a day, and in Pennsylvania the act of 1855 forbade all minors from working over 60 hours a week. Rhode Island limited the hours to 11 a day for children between 12 and 15 years of age, and was the only State that forbade night work for minors. However, the evils of night work at that time were not great. In Connecticut minors under 18 years could not work over 12 hours a day or 69 hours a week. The law became more lax instead of rigid, just the reverse of the course of legislation in Pennsylvania, where, starting out with a law that minors should not be held or required to work over 10 hours a day or 60 a week, the State later directly forbade their employment over 60 hours a week. In New Hampshire the children under 15 years of age working over 10 hours a day had to have the written consent of the parent. The New Jersey law stated that minors could not be held or required to work over 60 hours a week. If the child worked longer the employer could shift the responsibility by declaring it was voluntary and not required. Connecticut and Pennsylvania alone made any attempt at enforcing the law. In the former State the constables and grand jurors were to inquire after violations, and in Pennsylvania on complaint the constables could act.

As was to be expected, the New England States emphasized school attendance, and besides Pennsylvania were the only States to enact legislation of this nature. Massachusetts was the pioneer, and the other States modeled their laws on hers. Children under 15 years of age employed in manufacturing establishments in Maine, in cotton and woolen mills only, must attend school 3 months a year. Maine, New Hampshire, and Massachusetts lengthened the school term for children under 12 years of age. In Pennsylvania children 13 and under 16 years of age employed in certain specified industries must attend school three months consecutively out of 12 months. Two of the States—Maine and New Hampshire—required certificates of school attendance, and in the former the teacher was required to swear to the certificate. In Rhode Island and Massachusetts, these certificates, although not required, were conclusive evidence in cases of doubt. Pennsylvania did not regulate certificates. In Connecticut it was the duty of the school visitors to enforce the law, and in New Hampshire also the school committees were at first charged with enforcing the law, a provision that was afterwards repealed.

ANALYSIS OF CHILD-LABOR LEGISLATION IN FOUR SOUTHERN STATES.

The following tables contain a similar analysis of legislation in the Southern States:

ANALYSIS OF CHILD-LABOR LEGISLATION IN FOUR SOUTHERN STATES.

I. Age of employment.

State and date of law.	Industries affected.	Age limit.	Proof of age.	Enforcement.
North Carolina:				
1903	All manufacturing (except oyster canning).	Children under 12 years not to work.	Required; but simply the written statement of the parent.	Not provided for.
1907	All manufacturing.	Children under 13 years not to work, except apprentices 12 to 13.	do	Do.
South Carolina:				
1903	Mines, factory, textile manufacturing.	Gradually children under 12 years not to be employed (may assist parents). (Exceptions: Orphans, children of widows, totally disabled parents. Affidavits required for exceptions.) During summer children with school attendance certificate and able to read and write may work.	Not required, but affidavit required for children under 12 years.	Do.
1909	do	do	Required; but simply the signed statement of parent for children under 14 years.	Inspector.
Georgia, 1906	Factory or manufacturing establishment.	Children under 12 years not to work except orphans, children of widows, and totally disabled parents, and then not to work under 10 years. (Affidavit from father for children under 12 years.)	Required; but simply the affidavit of parent.	Grand jury to inspect affidavits.
Alabama:				
1886–87, repealed 1894–95.	Mines	Children under 15 years not to work.	Not required	Not provided for.
1892–93	do	Woman or boy under 10 years not to work.	do	Mine inspector.
1896–97	do	Woman or boy under 12 years not to work.	do	Do.
1903	Factory or manufacturing.	Children under 12 years not to be employed. Exceptions.	Required; but simply the affidavit of parent for all children.	Not provided for.
1907	Cotton, woolen, tobacco, printing and binding, glass, and injurious indoor work.	Children under 12 years not to work or be in or about.	Required; but simply the affidavit of parent for children under 13 years of age.	Inspector.

ANALYSIS OF CHILD-LABOR LEGISLATION IN FOUR SOUTHERN STATES—Continued.

II. Limitation of hours for children.

State and date of law.	Industries affected.	Detail of hour limitation.	Enforcement.	Night work.
North Carolina:				
1903	Manufacturing	Children under 18 years must not work over 66 hours per week.	Not provided for	No legislation.
1907	do	do	do	Between 8 p. m. and 5 a. m. forbidden children under 14 years.
South Carolina:				
1892	Cotton and woolen manufacturing.	All operatives (children included) not to work over 11 hours a day or 60 hours a week, except firemen, etc. Seventy hours overtime allowed.	do	No legislation.
1903	Mine, factory, or textile manufacturing.		do	Nightwork forbidden children under 12 years.
1907	Cotton and woolen manufacturing.	All operatives not to work over 10 hours a day or 60 hours a week, except firemen, etc., after 1908. Sixty hours per annum overtime allowed.	do	
1909	do	All operatives (children included) not to work over 11 hours a day or 60 hours a week.	Inspectors	
Georgia:				
1853	Cotton and woolen and other manufacturing.	Hours for minors (white) fixed at from sunrise to sunset.	Not provided for	Nightwork forbidden (repealed by Code of 1895).
1889	Cotton and woolen factories.	Hours not over 66 a week for all persons, including children.	do	Nightwork allowed in cotton mills, according to the Code of 1895.
1906	Manufacturing		do	Nightwork forbidden children under 14 years.
Alabama:				
1886–87, repealed 1894	Mechanical and manufacturing.	Children under 14 years not to work over 8 hours a day. Children under 18 years not to be compelled, etc.	do	
1903	Manufacturing	Children under 12 years not to work over 66 hours a week.	do	Nightwork forbidden children under 12 years. Children under 16 years not over 48 hours.
1907, reenacted in 1909.	Cotton, woolen, tobacco, printing and binding, glass, or injurious indoor work.	Children under 14 years not to work over 60 hours a week.	Inspector	Nightwork forbidden children under 16 years. Children 16 to 18 years not over 44 hours a week at night.

ANALYSIS OF CHILD-LABOR LEGISLATION IN FOUR SOUTHERN STATES—Concluded.

III. School-attendance requirements.

State and date of law.	Industries affected.	Nature of school requirements.	School certificates.	Enforcement.
North Carolina, 1907		4 months a year for apprentices 12 to 13 years.	Required; simply the written statement of the parent.	Not provided for.
South Carolina: 1903	Mines, factory, textile manufacturing.	Children under 12 years who work in summer must have attended school 4 months and be able to read and write.	....do....	Do.
1909				Inspectors.
Georgia, 1906	Factory or manufacturing establishment.	Children 12 to 14 years must be able to read and write and shall have attended school 12 weeks in the past year, 6 consecutively. Exceptions allowed. Children between 14 and 18 years must have attended school 12 weeks a year, 6 weeks consecutively.	Required; simply the affidavits of the parents.	Grand jury.
Alabama, 1907	Manufacturing, cotton, woolen, tobacco, printing and binding, glass or injurious indoor work.	Children 12 to 16 years must attend school 8 weeks a year, 6 weeks consecutively.	Not required.....	Inspector.

The analysis of the legislation of the 4 Southern States shows that in general 12 years is the legal age limit in the 4 States, below which children may not be employed in manufacturing establishments. In North Carolina the age limit has been raised to 13 years, except for apprentices between 12 and 13 years. In all of the States except South Carolina children are not only forbidden employment by the manufacturer, but they are not allowed to work in the factory. This prevents their going in to help an older relation and does away with the employer's plea that he is not employing the children, but that, independently of him, their parents take them into the mill to assist them. Where the law does not go further and state that children are not allowed to be in or about the factory, parents may make of the mill a day or night nursery, according to their exigencies, unless, of course, the management of its own accord forbids such a practice. Alabama alone forbids by law the presence of children under the legal age in factories. Two of the States—South Carolina and Georgia—let down the age limit for orphans and the children of widows or disabled fathers. In South Carolina an affidavit of inability to support the child is required of parents and guardians, while in Georgia it is only required of the disabled father. No child under 10 years of age is allowed under any circumstances to work in Georgia, whereas the South Carolina law sets no minimum age limit for exceptions. The Alabama law contained a similar exception which was later abandoned. South Carolina also allows children

under 12 years to work during the three summer months if they have fulfilled certain educational requirements.

The written statement of the parent in North and South Carolina and the affidavit of the parent in the other two States is all that is required to establish the child's age. In South Carolina the signed statement of the parent is required only for children under 14 years of age. If, for example, the parent says the child is over 14, no further statement is necessary. In none of the States is it demanded that the parent's affidavit or statement be substantiated by documentary proof of the age, record of birth, school or baptismal certificate, etc. In the two States, therefore, which attempt to enforce this law by inspectors it is as impossible for them to go back of the parent's word as in the States where there is no inspector. The advantage in this respect that the States with inspectors have over those without inspectors is that the provisions requiring parents' affidavits to be kept by the manufacturing establishment are enforced. In Georgia, although there is no inspector, the affidavits are open to inspection by the grand jury. An effective law would require proof independently of the parents' oath. It would then be impossible to have parents swearing, as in Alabama, that their children were 12 years old but at the same time unable to swear when they were born.[1]

The weekly working hours are limited for children in all the States, ranging from a maximum of 66 hours a week in North Carolina and Georgia to a maximum of 60 hours in South Carolina. In none of the States, however, except South Carolina is the daily maximum of working hours prescribed. In Alabama children under 14 years of age may not work over 60 hours a week, which means, of course, that those manufacturing establishments desiring to operate longer hours get rid of children under 14 years of age with a success dependent on the effectiveness of the law limiting ages. Children over 14 years of age may be worked indefinitely long. Nightwork is forbidden children under 12 years in South Carolina, under 14 years in North Carolina and Georgia, and under 16 years in Alabama. In North Carolina and Georgia there is no means of enforcing this law; in the two States with inspectors, filing the age and birth certificates furnishes the necessary basis for enforcement, but subject, of course, to the same disability as the age provisions discussed above.

The school-attendance requirements vary greatly. There are no requirements in North and South Carolina, except for children who are employed under the exceptions in the law. In North Carolina

[1] First Annual Report of the Department for the Inspection of Jails and Almshouses and Cotton Mills, Factories, etc. (1909), p. 9.

apprenticed children 12 to 13 years of age and in South Carolina children under 12 years, not orphans, children of widows or disabled fathers, who work in summer must have attended school four months in the past year. The obscure wording of the Georgia law makes its construction difficult, but the intent seems to be that children under 14 years must be able to read and write and shall have attended school for 12 weeks in the past year (six weeks consecutively), and that children until reaching 18 must attend school 12 weeks a year. Alabama requires children between 12 and 16 years to attend school eight weeks a year. Certificates of school attendance are required by law in South Carolina and Georgia. In Alabama the factory inspector has adopted a system of certificates for his convenience, although the law is silent on the subject.

In contrasting the legislation of the beginnings of industrialism in the two sections, one is at once struck by the fact that the protection provided for children prior to 1860 came in the New England States from the interest in education, and in the other States from the agitation of labor for a reduction of hours, and that, relatively speaking, limitation of age was rare. In the South at the present time, following the example of later legislation elsewhere, the emphasis is laid on directly limiting the age as the most effective means of striking at the roots of child labor. Educational scruples have played less part there. The practice more or less usual in the earlier legislation of limiting the hours of labor for children under specified ages has not been followed except in Alabama.

It has already been pointed out that the wording of the law in three of the Southern States forbids not only the employment of children by the owner or agent, etc., but their working in the establishment with parents or relatives. In only two of the four States limiting the age of employment of children in industry before 1860 was the law worded so as to prevent children from working in this way. The Pennsylvania and New Jersey laws stated that no child under the age mentioned should be "admitted as a worker." Pennsylvania changed the wording of the law the next year, when the age limit was raised to 13 years, to forbidding the employment of children in or about the factory, thereby making a loophole to allow them to work so long as they were not employed by the employer. The Rhode Island and Connecticut laws merely forbade their employment in or about the manufacturing establishment.

The "knowingly and willfully" provision is a common feature of the laws of the two sections at the same periods of their industrial development. With the exception of Connecticut all the laws prior to 1860 limiting the age of employment contain a provision exonerating the manufacturer from violating the law unless he knowingly

and willfully did so. Similarly, in the South the States, with the exception of Georgia, have the same exonerating provision, with the result that not a single suit for violation of the child-labor laws has been brought even in States with factory inspection. The 1907 law of Alabama in regard to false affidavits of age even goes to the length of making the prosecutor establish that the signer of the age affidavit, the parent, knowingly made a false affidavit as to the age of his child.

The most significant similarity between the legislation of the two sections lies in the absence of factory inspectors, whose especial duty it is to see that the laws are enforced. The Alabama and South Carolina laws have quite recently installed factory inspection, but the laws of Georgia and North Carolina still rely, as did the legislation before 1860, upon "the thousand-eyed police, public opinion," which was then considered an adequate enforcer of factory legislation. It is interesting and it may not be unprofitable to see just what the experience of the earlier legislation was that led to the adoption of factory inspection.

Starting with Massachusetts, the commission on the hours of labor reported in 1866 that "the most marked and inexcusable evil" brought to their notice was the condition of the factory children, and that the law was frequently and grossly violated.[1] A witness from New Bedford wrote that girls as young as 7 years were employed there and kept away from school. A letter from Fall River stated that 652 children, between 8 and 14 years, were all kept from school, and that the majority of them were unable to read and write. In Lawrence it was reported that a great number of children from 12 to 15 years did nightwork, and that the 10-hour law for children under 12 years was constantly violated.[2] The commission thought the people generally had no idea of the violation of the law. "They have felt something of that happy complacency," their report continued, "and freedom from all responsibility in the matter indicated by a writer, who coolly tells the commission that 'the State regulates the attendance at school of children employed by manufacturing companies.' The existence of this law is accepted as the assurance that all is right."[3] They recommended that the law be changed so as to double the amount of schooling required or that the English half-time system be adopted, and that an inspector be appointed to enforce the laws.[4] "It is plain," they wrote, "that no change in the law will meet the difficulty, without adequate means for its enforcement. We regard, therefore, this last suggestion as vitally important to the success of all legislation on the subject. Here has been the great difficulty with

[1] Massachusetts Legislative Documents, House, 1866, No. 98, pp. 4, 5.
[2] Idem, pp. 5, 6.
[3] Idem, pp. 8, 9.
[4] Idem, p. 49.

the law as it stands. Inadequate as it is, it has not been enforced, for want of a responsible person willing to incur the odium of making the complaint and entering upon the prosecution. We are persuaded, from the testimony before us, that the difficulty in enforcing the law does not lie with the employer or the parents exclusively. Interest and necessity both combine in producing the violation, and it is only necessary that a thoroughly competent person, whose heart is in the work and who sees clearly the importance of the law to the highest welfare of the children, be appointed to the responsible trust of securing its enforcement."[1]

As a result a law forbidding the employment of children under 10 years of age in manufacturing establishments was passed. Children under 14 years of age had to attend school 6 months each year, nor could they be employed more than 8 hours a day. The governor, at his discretion, might instruct the constable of the State and his deputies to enforce the provisions of the law.[2] The governor did not, however, see fit to have the deputies enforce the law, and the Boston Daily Voice, a labor paper, complained that the new law went unenforced.[3]

In the meantime the educational features of the act called forth various remonstrances. The selectmen of Ware, North Adams, Williamsburg, Northampton, Holyoke, Easthampton, etc., protested against a law which required the workers in manufacturing establishments to attend school longer than was required of other persons. "As a class they are more dependent on their labor than the rest of the community," wrote the Ware selectmen, "and the effect of such a law would be to impoverish those whom it is intended to befriend and, in some cases, make them a charge on the town for support."[4] The school committee and selectmen of West Boylston protested that the act was "detrimental to the manufacturing and mechanical interests of the State, is oppressive in its bearing upon a vast number of families now usefully and profitably employed, and is unjust in its discrimination against this whole element of our needy population, both foreign and native. * * * It will increase the cost of manufacture by necessitating the employment of older and more expensive help. * * * It discharges from employment a multitude of children who are the main dependence of infirm parents."[4]

The law was considerably modified the next year. The 10-year age limit was extended to mechanical establishments, and children from 10 to 15 years were not required to attend school more than

[1] Massachusetts Legislative Documents, House, 1866, No. 98, pp. 10, 11.
[2] Acts of 1866, ch. 273.
[3] Oct. 3, 1866.
[4] Massachusetts Archives, House Files, 1867, "Rejected bills."

three months, or they could attend half-time schools three hours a day for six months. Instead of the eight-hour day for children under 14 years, which the previous act had granted, the weekly hours were raised to 60 for children under 15 years of age. This time the act made it the duty of the State constable to detail a deputy to enforce all laws regulating the employment of children.[1] Although the Boston Weekly Voice spoke of the law as a shame to the workingmen of Massachusetts, the principle of factory inspection was at last established.[2]

As this is the only instance in this country of adopting the half-time system of England, even at the expense of digressing somewhat, the subject demands closer investigation. The English system allowed children under a certain age limit to work a prescribed number of hours a day and to attend school a certain number of hours, and involved, of course, two sets of children. Although very much discussed, the half-time school was actually adopted in only two mills, Naumkeag and Indian Orchard. The system at the Naumkeag mills, in Salem, Mass., approached most nearly that of England. There, a sufficient number of children were employed so as to spare one set of them for school each half day for 26 weeks of the year, so that each set received 13 weeks' full schooling a year. The forenoon set went to the mill at 1 o'clock, having already attended school, while the afternoon set left the mill at 12 o'clock, having the rest of the day for school, play, and meals. The two sets alternated every fortnight. The pay of the children was diminished about 16 per cent. A modification of the English plan was tried in 1868 at the Indian Orchard mills, near Springfield. The children worked at the mill until noon, at 1 o'clock they went to school for three hours with recess, and at 4 o'clock returned to the mill. They worked eight hours and attended school for three hours, and had no time for play.[3] The agent of the mills reported that the children received three-fourths wages, but that their monthly pay amounted to about the same as before, since they worked more regularly.[4] Later, in 1870, a change was made to the English system, and the children then worked one-half the time—five and three-fourths hours—and went to school three hours, but this was afterwards abandoned, as the wages for half-time work were too low.

At first the half-time schools were very generally indorsed, but later the Massachusetts Bureau of Labor Statistics pointed out that the combination of eight hours' work and three hours' study was too

[1] Acts of 1867, ch. 285.
[2] Aug. 1, 1867.
[3] Report of the Massachusetts Bureau of Statistics of Labor, 1872, p. 463.
[4] Idem, 1871, p. 494.

severe and claimed quite the same consideration as the agitation which was going on about overstudy in the public schools.[1] In 1875 the bureau opposed the system as a "dangerous and deluding makeshift." The period of childhood should be the period of free and unrestricted growth, and especially was such a childhood necessary in America, where the general tendency of life was toward great intensity. Childhood should be, moreover, the period of mental and moral discipline and education. They effectually clinched the matter by the following: "We believe in short that children should have no legal status as workers, but only as pupils; and above all, that the poverty of parents should not be allowed to foster the one condition or frustrate the other, inasmuch as it is unwise for the State to permit the future usefulness of its citizens to be jeopardized by causes within its control.

"We believe that the opportunities for education should be the same for all the children in the State; and that a special and necessarily poorer class of schools should not be established for the children of the poor. We believe this because it would be a direct blow at the democratic foundations on which our governmental structure rests."[2]

Turning next to Rhode Island, everything there points to the violation of the laws of 1853, 1854, and 1856.[3] The school commissioner's report for 1857, after complaining of the increasing absence of the children from school, held the failure of the manufacturers to comply with the law as partly responsible. The commissioner laid the blame, however, on the parents who persuaded the manufacturers to employ their children.[4] In 1870 the newly created board of education recommended that the employers of children should enter into a voluntary agreement to abide by the law, such as had been adopted in Connecticut. The Connecticut board had stated that the manufacturers of Connecticut were handicapped in enforcing the child-labor laws by the laxity in Rhode Island.[5] Again the following year the board complained that the law had been long inoperative. They estimated the number of children deprived of school as between four and five thousand and reported that the voluntary agreement had not met with sufficient acceptance to make it workable.[6] The next year the

[1] Report for 1871, pp. 489, 498.
[2] Report for 1875. pp. 60, 61.
[3] Towles, op. cit., pp. 27, 28.
[4] Report of the Rhode Island Public School Commissioner, 1857, p. 18, cited by Towles op. cit., p. 27.
[5] Report of the Rhode Island Board of Education, 1870, p. ix. The agreement ran as follows: "We hereby agree that from and after the beginning of the next term of our public school, or schools, we will employ no children under —— years of age, except those who are provided with a certificate from the local school officers, of actual attendance at school the full term required by law."
[6] Idem, 1871, pp. xiii, xiv.

board expressed itself more strongly and recommended compulsory education.[1]

In 1875, according to the State census, there were 1,258 children under 12 years of age, the legal age limit, employed in the cotton mills. Of these 599 were 11 years old; 433, 10; 146, 9; 64, 8; 8, 7; 5, 6; and 3, 5 years of age. The commissioner of industrial statistics reported in 1887 that the law was generally disregarded and only in a few cases was any attempt made to comply strictly with its provisions. What he said on the subject is precisely what one hears to-day: "There are many ways of getting around the law. The parents, who are, of course, the chief offenders, will overstate the ages of their children, and the manager of the mill seldom questions their statements. Then, employers claim, and with reason, that unless there is a general cooperation among the different factories to live up to the law, the exceptional ones who do live up to it do so at their own disadvantage. Thus, if one mill in a manufacturing town refuses to employ children under the lawful age, and another mill in the same town or in a neighboring town will employ them, the parents will leave the first mill for the second. In this way they have lost some of their most reliable help." The commissioner said that when he visited the mills and called the manager's attention to the small children in the mill, he was told they were only visitors who had brought dinner for older members of the family, or they were taking the places of older brothers and sisters for a few minutes. The truant officers charged with enforcing the law of 1883 only partially did so. They were appointed by the town councils, the members of which in many cases owed their election to the manufacturers' support, and sometimes the truant officers were appointed by the town councils with the understanding that they would let the factories alone.[2]

The Connecticut laws were never enforced, and in the revision of 1875 were omitted altogether.[3] How well the school visitors enforced the law of 1842 may be judged from the remark of one of them, "If I were to attempt to execute the present law the village would be too hot to hold me."[4] In the same way the constables and grand jurors who were to enforce the limitation of hours failed to perform the extra duty.

In New Hampshire, although the difficulties of enforcing the child-labor laws without factory inspection were never discussed to any great extent, there are indications that the laws were not enforced. In 1879 the school superintendent stated that a large majority of the 4,000 children reported as not attending any schools were to be found

[1] Report of the Rhode Island Board of Education, 1872, pp. 11, 12.
[2] Report of the Commissioner of Industrial Statistics, 1887, pp. 17, 18.
[3] A. M. Edwards, Labor Legislation of Connecticut, p. 30.
[4] Edwards, op. cit., p. 8.

in the manufacturing towns, and that they were the children of French Canadian parents.[1] That year for the first time in New Hampshire the law set a limit upon the age of employment of children, forbidding those under 10 years to work in manufacturing establishments.[2] Two years afterwards a law was passed giving truant officers the enforcement of the educational features of the law of 1847. It was left optional with the school committees whether they would require inspection work of the officers, or, indeed, whether they would appoint them.[3] The law was the outcome of a bill to authorize the school committee of Manchester to elect a truant officer.[4] The Manchester school committee had complained of the difficulty of getting the French Canadians, who had immigrated there to secure employment in the mills, to send their children to school. Out of the entire school population of the town, 5 to 15 years of age, 3,153 attended school and 1,271, or nearly one-third, stayed away. Of the latter, 630 were French Canadians. These, parents and children alike, rebelled against the compulsory-education law and did everything to circumvent it. The committee stated that the superintendent in his official dealing with the question met "almost daily with instances of unblushing deception in children and parents, determined, if possible, to cheat him out of a few days in reckoning the required three months' schooling.[5]

From Maine comes the same story of unenforcement of the earlier laws. As in Connecticut, the school committee might inquire into violations of the law, but they also failed to do so. The governor's annual message of 1874 said that the factory act requiring school attendance was a dead letter,[6] and later, in 1885, that the law restricting the hours of labor of women and children was violated.[7] Apart from the compulsory education law of 1875, nothing further was done for factory children until the act of 1887, which, for the first time, carried inspection with it.

In New Jersey the bureau of statistics of labor and industries reported, in 1878, that the employers had ignored their questions about the employment of children, from which it was inferred that the law had been neglected.[8] The next year the report showed that 169 children under 10 years of age, the legal age limit, were working in factories.[9] The testimony of the operatives showed that children

[1] Report of the Superintendent of Public Instruction, 1879, p. 173.
[2] Acts of 1879, ch. 21.
[3] Acts of 1881, ch. 42.
[4] House Journal, 1881, p. 699.
[5] Report of the Superintendent of Public Instruction, 1881, p. 48.
[6] Whitin, op. cit., p. 49.
[7] Governor's message, 1885, p. 42; Whitin, op. cit., p. 51.
[8] Report of the Bureau of Statistics of Labor and Industries, 1878, pp. 23–27.
[9] Idem, 1879, pp. 96, 97.

as young as 7 years were employed.[1] When the factory inspector finally was appointed he stated in his first report that, as far as enforcement was concerned, the early laws might as well have never been passed. "It is scarcely to the credit of our State," he wrote, "that 33 years after the passage of the 10-hour law feeble young girls under 16 years of age and children almost too young for school should be found toiling in our manufacturing establishments."[2]

Similarly in Pennsylvania the commissioner of industrial statistics reported the educational features of the child-labor law a dead letter, as far as 3 month's consecutive schooling within the year was concerned. "Nor can this be wondered at when we contemplate that the enforcement of the wholesome provision alluded to devolves upon no one in particular, but is general in character, giving to the party suing, whoever it may be, one-half the fine imposed."[3] He recommended that the duty of enforcement should be invested in some local or county official. As to the 10-hour law, he declared that it was not, as a rule, adhered to.[4] In 1884 the commissioner repeated that factory legislation was a "farce in Pennsylvania, there being no proper person to enforce what little statutory regulations as do exist upon the statute books." He said that the constables had never been known to report a violation.[5]

[1] Report of the Bureau of Statistics of Labor and Industries, 1881, pp. 97–100.
[2] First Annual Report of the New Jersey Inspector of Labor of Children, 1883, p. 7.
[3] Report of the Bureau of Industrial Statistics, 1880–81, p. 102.
[4] Idem, p. 103.
[5] Idem, 1884, p. 20.

CHAPTER VII.—CONDITIONS UNDER WHICH CHILDREN LEAVE SCHOOL TO GO TO WORK.

This report, which forms the seventh volume of the general investigation into the condition of woman and child workers, embodies an intensive study of the conditions under which 622 children from seven different communities left school and began their industrial life. The places selected for study were Pawtucket and Woonsocket in Rhode Island, Plymouth and Hazleton in Pennsylvania, Columbia, S. C., Columbus, Ga., and a group of three small mill towns near Columbus, partly in Georgia and partly in Alabama. These were chosen as being fairly typical of three separate sections of the country and as furnishing a considerable variety of educational and industrial opportunities for the children under consideration.

In these communities the names were first secured of all the children who had left school during a period of approximately half a school year. All who were over 16, all who had left from above the grammar grades, and all who had not gone to work after leaving were dropped from the list, leaving for detailed study all under 16 who had left from elementary or grammar grades to go to work during the selected period. This left 353 boys and 269 girls, from 6 to 15 years of age, whose circumstances were studied in much detail. Both parochial and public schools were included in the study.

RACE OF CHILDREN STUDIED.

Racially the composition of the groups of children thus secured showed much variation from place to place. More than four-fifths (83.9 per cent) had been born in the United States, but only 50.7 per cent had American fathers. In the three southern places the children were predominantly of native stock, but in the northern places the proportion of such children varied from 60.7 per cent in Hazleton to 15.7 per cent in Woonsocket. The leading foreign race among them in Rhode Island was French Canadian, in Plymouth Slavic, and in Hazleton German. In the northern places children of American parentage appeared among those leaving school for work far less numerously than their proportion in the population warranted. In the southern places the children were so generally of American descent that no comparisons were possible.

CAUSES FOR LEAVING SCHOOL.

To judge whether a financial necessity existed for the withdrawal of these children from school, a careful study was made of the family income for the preceding year, and from its total were subtracted the earnings of any children under 16, rent or taxes, and any expenses for sickness or death. In endeavoring to ascertain whether or not a child's earnings were really necessary, the ground was taken that ordinarily if, after deducting the above items, the per capita weekly income were as much as $2, necessity could not be considered the real reason; if it fell as low as $1.50, the child's wages might legitimately be regarded as necessary; and between these two points whether or not the wages were necessary would depend so much upon the character of the family that it might almost be called a question of morals or intellect rather than of finance. On this basis a study of family incomes and causes of the children's withdrawals gave the following results:

NUMBER AND PER CENT OF CHILDREN LEAVING SCHOOL FOR SPECIFIED CAUSES.

Cause for child leaving school to work.	Number.	Per cent.
Necessity	186	30.0
Child's help desired though not necessary	173	27.9
Child's dissatisfaction with school	165	26.6
Child's preference for work	61	9.8
Miscellaneous causes	35	5.7
Total	620	100.0

Necessity, it will be seen, accounts for less than one-third of the withdrawals, while a desire for the child's earnings, not occasioned by real need, accounts for nearly as large a proportion. In not far from two-fifths of the cases (36.4 per cent) the withdrawal was due to the child's own attitude toward work or school, an attitude in which the parents seemed to acquiesce without serious protest. Sixteen children left on account of health, 6 to take advantage of a good opportunity to learn a trade, and 7 because of company pressure; i. e., the companies who employed the adults of the families needed more young workers, and insisted upon these children coming into the mills regardless of their own or their parents' wishes. In practically two-fifths of the cases (39.5 per cent), the parents declared themselves able and willing to have sent the children to school longer had the latter been willing to go. The influence of vacation work in leading to a permanent withdrawal from school is strikingly shown. Seventy-two of the children studied began work during vacation, intending to return to school when it reopened. Only 23 of them carried out their intention, while 49 having got fairly started at work, decided to keep on.

In the cases in which withdrawal was due to necessity the family's poverty rarely seemed attributable to parental fault or indolence.

The ablebodied father living in idleness while his wife and children worked was so infrequent as to be almost a negligible factor, and deserting fathers were scarcely more numerous. Only 18 cases, concerning 2.9 per cent of the children studied, were found in which fathers had been unemployed during any part of the preceding year, 1907–8, by their choice or fault. The widowed mother appeared rather numerously, just one-fifth of the children coming from homes in which neither father nor stepfather was found.

GRADES REACHED BY CHILDREN BEFORE LEAVING.

The majority of these children were leaving school with but scanty educational attainments. Less than one-fourth had reached the seventh grade and only a trifle over one-half had reached the fifth. The proportion who left before reaching the fifth grade was for the various localities as follows:

	Per cent.
Pawtucket, R. I.	28.2
Woonsocket, R. I.	42.2
Columbus, Ga.	58.5
Georgia and Alabama Counties	76.6
Columbia, S. C.	77.4
Plymouth, Pa.	48.8
Hazleton, Pa.	14.8
Total	46.0

A significant fact was that, in spite of the low grade reached, 473, or 83.3 per cent, of these children were above the average age of their classmates. The difference in age was considerable, 50 being 5 years or more older, 142 being 3 years, and 143 2 years older than the average of their classes.

It is not surprising to find that this degree of retardation was accompanied by a considerable amount of dissatisfaction with the schools. Nearly half the children (48.9 per cent) were dissatisfied, the proportion ranging from 32.9 per cent in Columbus, Ga., to 60.2 per cent in Plymouth. As far as could be discovered, the dissatisfaction was due to a dislike of the general manner of life in school rather than to any specific cause of complaint. It was more general among children than among parents, and although most prevalent among the dull and backward pupils was by no means confined to them. Taking all places together, 39.5 per cent of the bright children were dissatisfied, as against 46.9 per cent of the average and 67.1 per cent of the dull. Apparently the introduction of manual or industrial training would not have altered the situ-

ation materially, as of 583 children questioned on the point only 89 boys and 54 girls thought they would have been more desirous of staying in school if such training had been provided.

INDUSTRIAL EXPERIENCES OF CHILDREN STUDIED.

Turning to the industrial experiences of the children, it is noticeable that the age at beginning work was appreciably lower than that of leaving school, due to the fact that 137 had worked before, then returned to school, and were now leaving again. The average age at beginning work was for the various localities as follows:

	Years.
Pawtucket and Woonsocket, R. I	14.1
Columbus, Ga., and environs	11.8
Columbia, S. C	10.7
Plymouth and Hazleton, Pa	13.4

On beginning work the children entered a great variety of industries, mostly of low grade.

Practically 90 per cent of the boys and all of the girls entered industries whose average weekly wage for all employees is under $10; 7 per cent of the boys entered industries whose average wage is between $10 and $15; and 3 per cent entered industries whose average wage is $15 or over.[1]

In the interval between the time the children entered these industries and the time when the investigation was made, an interval ranging from a few weeks to nearly a year, according to the experience of the individual child, there had been little passing from one of the above industry groups to another. The girls remained without exception in the lowest group. Among the boys there had been a slight movement, the proportion rising to a higher group exceeding the proportion which sank to a lower, but the numbers concerned were too small to justify any conclusions.

The hours of work were generally long, only 16.9 per cent working less than 10 hours daily. Seventy-two worked 11 hours, and 13 12 hours or more daily. These excessively long hours were found chiefly in the southern communities and largely among the children working in stores and for telegraph companies.

The wages received by the boys at the time of the investigation ranged from under $1 to $16.50 a week, the latter amount being enjoyed by only one boy. Among the girls they ranged from less than $1 up to $10 a week, this maximum again being reached by only one. The largest wage group found, numbering 99, received from $5 to $5.50 a week, but a considerably larger number earned under than over this amount—365 below and 146 above, with 3

[1] Vol. VII, Conditions Under Which Children Leave School to Go to Work, p. 152.

children not reporting and 9 working for relatives, who paid no wages. There seemed little connection between age and wages received, and still less between the school grade reached and wages received. As to the latter point, much of the work undertaken by the children is of such a character that it requires little mental training: "50.6 per cent of the employers say that no education whatever is needed by the larger number of their employees in order to do the best work."[1]

DEGREE OF CHOICE EXERCISED IN GETTING WORK.

Apparently very little discrimination was shown in regard to the industry entered, the child taking in general the first place he could find or going where friends or relatives worked. Only 11.3 per cent (70 children) seemed to exercise much choice; of these 38.6 per cent (27 children) selected their work for the purpose of learning a trade or skilled occupation, while the others were attracted by desirable work or good initial wages. There was a good deal of drifting about from one occupation to another, 34.5 per cent of the children having changed employers from one to three or more times, and four-fifths of these changes having been to a different industry. A considerable portion of this was mere aimless drifting about, but nevertheless the child who changed employers seemed to have a considerably better chance of receiving higher wages than the child who worked away steadily in one position.

In a large number of cases the attitude of both parents and children toward the child's work was one of passive acceptance; the child took the first place which offered, and as to what was to come after that, why, time would show. In other cases, both had more definite ideas of what they wanted. In 43.6 per cent of the cases the parents and in 49 per cent the children had definite ambitions as to their future occupations. These ambitions covered a great variety of pursuits, but for boys skilled manual trades and for girls dressmaking and millinery appeared to be the leading choices. Unfortunately the prospects for realizing these ambitions were far from good.

In more than two-thirds [69.7 per cent] of the cases where the boys are intelligent enough to have a definite ambition, the work they are doing is in no way related to that ambition and affords no possible opportunity of furthering it. * * * Among the girls there is even less connection between occupation and ambition. In 17 of the 120 cases in which girls had a definite ambition their work gave them the openings needed for gratifying it, but in 103 cases (85.8 per cent) the work offered no possible chance for furthering the ambition.[2]

[1] Vol. VII, Conditions Under Which Children Leave School to Go to Work, pp 240, 241.
[2] Idem, p. 189.

ILLEGAL EMPLOYMENT.

Special attention was given to the subject of illegal employment. Almost one-third of the children (203, or 32.6 per cent) had at one time or another worked under illegal conditions, some of them having been so employed more than once. About one-sixth (102) were working illegally at the time of the investigation. The illegalities ranged from merely being at work without legal papers, though of full legal age, to nightwork below the permitted age, unlawfully long hours, employment in prohibited occupations, employment below the legal age, and so forth. There seemed little connection between race and illegal employment, the latter depending much more upon the ease with which in a given community the law might be evaded, or the impunity with which it might be defied. No one pursuit showed any marked excess of cases of illegal employment in proportion to the number of children employed in it. The most striking feature of the situation was that of the whole number of illegalities involved (281, one child not infrequently having been employed under several different illegal conditions) only 16 were terminated by official action on the part of school authorities, factory inspectors, employers, or others, the remainder having been left to correct themselves or to go uncorrected. The laws of the different States differed so widely that any comparison of illegalities by localities was hardly practicable. Some of the worst conditions found in the way of premature employment, long hours, and nightwork were wholly legal.

A special study was made of the incomes of families in which children were found working during the period covered by the investigation at an illegally early age. Information was secured for 71 such cases. Measuring the family income by the standard used in deciding upon the real reason for leaving school, it was found that in 28.2 per cent of these cases the children's earnings were really needed, in 29.6 per cent it would depend upon the character of the family whether or not there was real need for them, and in 42.3 per cent necessity could not reasonably be pleaded as an excuse.

RETARDATION, REPEATING, AND ELIMINATION.

The report includes a chapter upon retardation, repeating, and elimination in the six cities studied, which is based upon the statistics for the school population as a whole, instead of being confined to those children who had left school to go to work. A very considerable amount of retardation existed.

The number and per cent of pupils as measured by two different standards are shown in the following table. The first standard assumes any age under 8 in the first grade as normal (the average for the first grade nowhere falls below 7 years) and that any pupil

8 years of age or over in that grade or more than one year older than normal for each succeeding grade is retarded. The second standard takes as normal the age at which the largest number of first-grade pupils is found—the "mode" age, as it is often called—and any pupil more than one year older than this normal for each succeeding grade is considered as retarded.

NUMBER AND PER CENT OF PUPILS RETARDED.

Locality.	Standard I.—Any age under 8 in grade 1 considered as normal (one year added for normal age in each succeeding grade).		Standard II.—Mode age in grade 1 considered as normal (one year added for normal age in each succeeding grade).		
	Pupils retarded.		Mode age in grade 1.	Pupils retarded.	
	Number.	Per cent.		Number.	Per cent.
Pawtucket, R. I.	1,426	28.0	6	2,907	58.2
Woonsocket, R. I.	1,181	40.8	6	1,844	63.7
Columbus, Ga.	790	51.5	7	790	51.5
Columbia, S. C.	786	50.8	7	786	50.8
Plymouth, Pa.	872	48.7	7	872	48.7
Hazleton, Pa.	963	41.3	6	1,748	75.0

This summary shows very well the different results obtained by using the two standards, a difference not only in the absolute but in the relative amount of retardation. Thus, Pawtucket which, according to the first standard, has the smallest per cent of retardation, falls back to the fourth place when the second standard is used, and Hazleton, which by the first standard stands third in the list, sinks to the very foot of the list when the second is applied.

It is an open question which standard is the fairer. In favor of standard II, the movable standard, it may be said, first, that Pawtucket and Woonsocket admit pupils to school at the age of 5 years, and secondly, that in a nine-grade system, such as is found in Pawtucket and Woonsocket, a pupil must enter at 5 years of age and progress a grade each year, in order to graduate at what is generally considered the normal age for graduation, namely, 14. A pupil of 6 in grade 1 in Pawtucket and Woonsocket is, therefore, practically more retarded than a pupil of 7 in Columbus and Columbia, which have seven-year systems. Standard II is not, however, as strict as this comparison might suggest, for a pupil of 6 is considered of normal age in Pawtucket and Woonsocket equally with a pupil of 7 in Columbus and Columbia.

It will be noticed that whichever standard is used, there is but a small amount of difference found in the country at large.[1] According to standard I, Pawtucket is the only place showing a marked variation from the others, having a much smaller per cent of retarded pupils than the other five, while by standard II Hazelton is the only place showing a pronounced divergence.

Another noteworthy point, considering the relatively high standing of most of the places in the industrial and educational world,

[1] Compare Leonard P. Ayres, Laggards in our Schools, p. 3: 7 per cent to 75 per cent retarded.

is the large percentage of retarded children. The poorest town from a civic point of view, Plymouth, has the smallest (though not a small) percentage of retarded children, according to standard II. All the places, by either standard (except Pawtucket by standard I), have a higher percentage of retarded pupils than the estimated average for the whole country, viz., 33 per cent.[1]

A study of repeaters in the grades in the spring of 1910 follows, from which it is evident that failure to complete a grade in the time assigned is by no means the only or even the main cause of retardation. For the various cities the repeaters formed the following percentages of the total enrollment:[2]

	Per cent.
Pawtucket	11.4
Woonsocket	9.7
Columbus	12.3
Columbia	10.2
Plymouth	12.1
Hazleton	9.5

By comparing these figures with those of the preceding table it will be seen that the repeaters nowhere account for even half the retardation shown, and that Pawtucket, judged by the first standard, is the only place in which they approach this proportion. When the second standard is used the repeaters account for from about one-eighth to one-fourth of the retardation shown. The force of these figures is diminished by the fact that they refer to different years, but there is no reason to suppose that conditions altered materially between the spring of 1908 and that of 1910. Apparently late entrance, or transfers from one school system to another, or some combination of causes, rather than inability to do the work of a grade within the proper time, is responsible for the major part of the retardation found.

The following table shows the degree to which these different causes were responsible for repeating. Sixty-one children for whom no cause was reported were omitted from consideration.[3]

NUMBER AND PER CENT OF BOYS AND OF GIRLS REPEATING FOR SPECIFIED LEADING CAUSES.

Cause.	Boys.		Girls.	
	Number.	Per cent.	Number.	Per cent.
Irregular attendance or absence[4]	301	29.7	264	34.1
Lack of ability, slowness, dullness, or immaturity	203	20.0	164	21.2
Lack of interest or application	244	24.1	125	16.2
Poor health and physical defects	131	12.9	115	14.9
Lack of English	64	6.3	64	8.2

[1] Vol. VII, Conditions under which Children Leave School to Go to Work, pp. 260, 261.
[2] Idem, p. 285.
[3] Idem, p. 281.
[4] Including moving and change of schools.

The age and sex distribution of repeaters are also studied, but do not furnish any definite conclusions:

On the whole this study of repeaters may be summarized by saying that, while the first grade usually contains both the largest number and the largest proportion, they are found in unexpected numbers throughout the grades; that the number repeating at each age is quite uniform from 7 to 13 years, after which it decreases rapidly; that it is difficult to show any marked difference between girls and boys as to causes of repeating; and that while inability to accomplish the prescribed courses and lack of interest in the school work both account for a considerable proportion of failures, the most important single cause is found in irregular or nonattendance.[1]

Confirmation of this last conclusion is found in a table compiled from data secured from the teachers of the cities studied, showing the number of pupils who had dropped out during three successive school years. None were included who had been transferred to other schools, or who, having left, returned within the same school year. The proportion thus leaving ranged from 11.4 per cent to 27.7 per cent of the total enrollment. The proportion of the children thus leaving who were under 12 years was 52.2 per cent in 1904–5, 56.4 per cent in 1905–6, and 58 per cent in 1906–7. The great majority of these children had left before the last two months of the school year were reached. Consequently those who returned the following year would almost inevitably have to repeat the grade from which they had dropped out.

The study of elimination is based on the number of beginners and repeaters actually enrolled in the first grade in the spring of 1910, as shown by full records prepared by the individual teachers of the cities studied. The usual correction for growth of population is applied, and from the resultant figures the proportion of beginners remaining to each grade is calculated from the grade memberships of 1908. As two of the cities had seven-grade, two eight-grade, and two nine-grade courses, comparison of those remaining to the final grade would be plainly misleading. The fifth grade, however, which is usually taken as a kind of dividing line below which the greatest amount of elimination is likely to occur, furnishes a fair basis of comparison. For the various places the proportion which the fifth-grade membership formed of the beginners stood as follows:[2]

	Per cent.
Pawtucket, R. I	85 6
Woonsocket, R. I	46 9
Columbus, Ga	60 2
Columbia, S. C	97.0
Plymouth, Pa	34 1
Hazleton, Pa	75 6

[1] Vol. VII, Conditions under which Children Leave School to Go to Work, p. 292.
[2] Idem, p. 290.

As the figures showing the grade membership were, except in the case of Columbia, collected in the spring, these percentages may fairly be taken as representing the number likely to finish the fifth grade. It will be seen that the number falls very far short of what, according to some of the theoretical methods of estimating beginners, it should be.

In itself the amount of elimination in six specified cities has perhaps little value, but in this case it gains in importance because it offers an opportunity for testing by known facts the two principal methods yet advanced for estimating the number of beginners—the Thorndike and the Ayres methods. According to the first, it will be remembered, the average of the enrollment of the first three grades is taken as representing the number of beginners; according to the second, this number is found by taking the average of the generations of children of the ages 7 to 12 years enrolled in the school membership. Tested by the data concerning beginners collected in this investigation, the first of these methods gives results very much nearer the correct figures than are obtained by the second. The number of beginners, as estimated by the first method, approached very closely to the actual figures, once being too large by 47 and once by 2, but elsewhere being slightly too small. The number of beginners obtained by the second method, on the other hand, was invariably much too small, only once coming within 100 of the real number, and elsewhere running down to less than one-half.[1]

The report ends with a brief study of the number who complete the grammar grades and enter the high school. Those finishing the grammar grades range from 2.2 per cent of the total enrollment in Woonsocket to 5.8 per cent in Hazleton.

But even more striking than the small proportion who finish the elementary course is the high age at which so many of them reach this goal. * * * Taking the children from all the places together, in 1904–5, those who had reached or passed 15 formed 49.8 per cent of the graduates; in 1905–6 they were 46.9, and in 1906–7, 43.9 per cent. This throws an interesting side light on the question of elimination. It is known that for the great mass of school children 14 is an outside limit of attendance; indeed it is questionable whether 13 is not an extreme limit for the majority. But if from two-fifths to one-half of those graduating are 15 or more, it is evident that a very large proportion of those whose school life ends by or before 14 never reach the graduating class.

Passing on from graduation through the first year of high school attendance, the familiar phenomena of elimination are still apparent. In every place and for every year some of those graduating from the lower grades fail to enter the high school, and of those who do enter a varying but considerable proportion drop out before completing the first year's work.[2]

[1] Vol. VII, Conditions under which Children Leave School to Go to Work, p. 283 et seq.
[2] Idem, p. 303.

CHAPTER VIII.—JUVENILE DELINQUENCY AND ITS RELATION TO EMPLOYMENT.

SCOPE OF REPORT.

The purpose of this study was to discover what basis of fact underlies the frequently expressed belief that the early employment of children is apt to lead to delinquency on their part. As a further purpose it was desired, if such a tendency were found, to discover whether it is inherent in the fact of early employment, or can be traced to certain occupations, and, if so, what these are.

To secure representative cases for study seven cities—Indianapolis, Baltimore, Boston, Newark, New York, Philadelphia, and Pittsburgh—were selected, both as affording abundant and varied opportunities for child labor, and as having juvenile courts and probation systems, without which aids a detailed study of juvenile offenders would be exceedingly difficult. Moreover, in all these places child labor is supervised and regulated, so that there was little risk that the case against it would be unduly weighted by abnormally injurious conditions of work. The children coming before these courts during the year 1907–8 were studied, with the exception of those in New York, where the numbers concerned were too large for inclusion, and only those were taken who were on probation at the time of the visit of investigation. From these courts the cases of 2,034 boys and 309 girls were secured.

To give the study a wider basis, the children committed during the selected year from other localities to reformatory institutions in or near these cities were also included. From these sources the cases of 1,344 boys and 252 girls were secured, so that in all the investigation dealt with 4,839 children, 4,278 boys and 561 girls.

The offenses committed by these children vary widely, ranging from truancy and trivial breaches of municipal ordinances to such crimes as arson and burglary. Larceny is the leading offense for boys, with burglary second, but far behind; among the girls, immoral conduct leads, with larceny second. Among both boys and girls "incorrigibility" appears as a frequent cause of arrest, the term indicating a generally unsatisfactory condition rather than any one definite misdemeanor. Recidivism is common, 48.6 per cent of the boys and 22.6 per cent of the girls having records of previous offenses.

NUMBER AND PROPORTION OF WORKING AND NONWORKING OFFENDERS.

A working child is defined as one who has been employed, whether or not he is working at the time of his latest offense. According to this definition 56.5 per cent of the boys and 62.6 per cent of the girls were working children. By comparing the number of the working and nonworking delinquents with the census figures for working and nonworking children in the places studied, it is shown that the workers are disproportionately numerous.

Even in Indianapolis, where the nonworking delinquents form a larger proportion of the whole group than anywhere else, their ratio to the nonworking is but half that which the working delinquents form of the working children. Elsewhere among the boys the ratio of the working delinquents is from three to over ten times as great as of the nonworking. Among the girls the disproportion is even more striking.[1]

Roughly speaking, the nonworkers are responsible for a little over one-third, the workers for something under two-thirds of the offenses. The ages at which these offenses were committed range from 6 to 16 years. When it is remembered that a majority—and presumably a large majority—of all the children between these ages are not working, this preponderance of offenses among the workers assumes impressive proportions. The excess of working delinquents is not confined to any one class of offenses. With a few exceptions, they lead in all forms of wrongdoing. In the case of forgery the excess of workers is abnormally large. A study of the individual offender explains this by showing that in the majority of cases the youthful forger has been engaged in some work which has familiarized him with the uses of commercial paper and the opportunities for forgery.[2]

The excess of workers appears even more strongly among the recidivists than among the first offenders (65.8 per cent of the recidivists were working children, 34.2 per cent nonworking), and in general among the serious offenders as markedly as among the petty delinquents. Burglary among girls presents a curious exception in this respect, 5 of the 6 cases of this crime found among them having been committed by nonworking girls who were still attending school. Among the boys guilty of burglary, although the workers show an excess, the two groups are more nearly equal than for any other offense except truancy, 389 cases of burglary having been committed by working and 324 by nonworking boys. No explanation of this variation is attempted.

The proportion of working delinquents is especially striking among the younger offenders. Of the 938 boys under 12 more than one-fifth (22.4 per cent) were workers, an impressive percentage when

[1] Vol. VIII, Juvenile Delinquency and its Relation to Employment, ch. 2, p. 37.
[2] Idem, pp. 39 and 40.

it is remembered how small a proportion of all the children under 12 can be at work in the localities studied. Among the boys of 12 and 13 years 42.4 per cent and among those from 14 to 16 years 80.8 per cent were workers. At this latter age, however, the majority of boys would naturally be at work, so the high percentage here is less significant. Among girls the proportion of working delinquents stood: Under 12 years, 9.4 per cent; 12 and 13 years, 36.4 per cent; 14 to 16 years, 77.7 per cent.

CONDITIONS POSSIBLY CONTRIBUTORY TO DELINQUENCY.

AGE.

A study was made of conditions which might lead to delinquency to see how far the excess of workers may be accounted for on other grounds than that of early employment. Age, parental condition, nativity of parents, and character of home were the selected conditions. In regard to age no definite conclusions could be reached, since the age at which children are most likely to become unmanageable coincides pretty closely with the age at which, in the States studied, the great majority go to work, so that the relative weight of the two factors can hardly be estimated.

PARENTAL CONDITION.

Considering these delinquents as a whole, they seem to show very clearly the effect of unfortunate parental conditions. Only 57.5 per cent of the boys and 34.2 per cent of the girls were living under normal conditions; that is, in their own homes with their own fathers and mothers. Seven per cent of the boys and 17.6 per cent of the girls were orphans or deserted children, 24.3 per cent of the boys and 27.9 per cent of the girls were half orphans whose surviving parent had not remarried, while the remainder lived with stepparents or with strangers. The loss of a father seemed much more likely to lead to delinquency than the loss of a mother; 17 per cent of the boys were fatherless against 7.3 per cent without mothers, while among the girls 18.5 per cent had lost fathers and 9.4 per cent were motherless. The girls were markedly more unfortunate than the boys in regard to parental condition.

As between workers and nonworkers the former show less favorable conditions. Among the boys 45.4 per cent of the workers against 38.9 per cent of the nonworkers came from broken homes, while among the girls the proportions stood 67.8 per cent of the workers to 62.3 per cent of the nonworkers.

FOREIGN PARENTAGE.

It is widely recognized that children of immigrants are at a disadvantage because their parents, owing to unfamiliarity with the customs of the new land, are less able to guide and control them. In this respect, again, the workers show an excess of unfavorable conditions. Among the boys 58.8 per cent of the workers as against 50.9 per cent of the nonworkers had foreign-born parents, while among the girls the same proportions stood 41.7 per cent to 31.8 per cent. Taking workers and nonworkers together, 44.7 per cent of the boys and 62 per cent of the girls had native-born parents.

CHARACTER OF HOMES.

In regard to the moral character of the homes the situation between the two groups is reversed, the workers showing an excess of favorable conditions. Among the boys only one-fifth of the workers as opposed to nearly one-third of the nonworkers came from distinctly bad homes, while from fair and good homes the proportions were 76.2 per cent of workers and 65.4 per cent of nonworkers. Among the girls 54.9 per cent of the workers as against 48.2 per cent of the nonworkers came from fair and good homes. Taking the group of delinquents as a whole, 71.6 per cent of the boys and 52.4 per cent of the girls came from homes in which the moral conditions were fair or good. Evidently the excess of working delinquents can not be explained by a reference to home conditions. The working child more frequently than the nonworking child goes wrong, even where home conditions are favorable.

Of the four factors considered, the effect of one—age—is altogether dubious; one, the nativity of parents, seems to tell against the worker, but since it was not possible to learn the relative numbers of native and foreign-born parents in the populations from which these delinquents were drawn, the figures are not wholly conclusive; in one, parental condition, the workers were distinctly at a disadvantage, while in the fourth, that of home conditions, they were more fortunate than the nonworkers. Combining these results, it appears that working children furnish far more than their proportionate share of the group of juvenile delinquents; that this excess is found wherever they are studied; that it occurs in every age group; that it is not limited to any one offense; and that it can not be adequately accounted for by parental condition, race, or character of home and home training. The conclusion seems inevitable that the fact of being at work constitutes an important element in the problem and that working children, because they are working rather than school children, are far more likely to go wrong than those who can enjoy a childhood unburdened by adult responsibilities.

OCCUPATIONS FROM WHICH DELINQUENTS CAME.

The study of the various industries for the purpose of seeing how far the children's delinquencies should be attributed to occupational influences rather than to the mere fact of being at work is hampered by the lack of knowledge concerning the occupational distribution of children in general. Considerably over half of the working children (60.7 per cent of the boys and 57.6 per cent of the girls) were employed at the time of their latest arrest. Among the boys thus employed the largest proportion from any one occupation (21.83 per cent) came from newsboys, errand boys coming next with 17.8 per cent. Among the girls domestic service in its different forms (servant in private family, in hotel or restaurant, or worker in private family for board and clothes) leads, furnishing 53.95 per cent; the different textile industries come next. giving 12.36 per cent, while workers in stores and markets furnish 5.44 per cent. In the principal occupation groups there seems a connection between the general conditions of a given occupation and the leading offenses committed by the children who follow it. Thus, while larceny is the leading offense for all the occupations considered, its importance rises or falls according to the opportunities a pursuit offers for its easy indulgence. In general, the largest number of offenders come from the occupations in which the child has little or no supervision, such as the street trades and the work of errand and delivery boys, or in which the work brings him into especially dangerous associations, as in the case of children employed about bowling alleys and other amusement resorts.

BOY DELINQUENTS IN SIX SPECIFIED PURSUITS.

Six groups of boys from pursuits which seemed specially open to objection were chosen for detailed study—the errand and delivery boys, the newsboys and bootblacks. office boys, street venders or peddlers, telegraph messengers, and the boys employed in or about amusement resorts. From these six groups came 1,176 of the 2,416 working-boy delinquents, or 48.7 per cent, the remaining 51.3 per cent being scattered among 52 different occupations. The question at once arises whether the prominence of these occupations is due to something detrimental in the occupations themselves or whether the children entering them are specially unfortunate in regard to home conditions, parentage, etc., and therefore more likely to go wrong. To test this the following table was constructed, in which the conditions prevailing among the working delinquents as a whole (the lowest line of the following table) have been taken as a standard. Each occupation may be ranked above or below this standard,

according to whether it shows for the specified detail a more or less favorable state of affairs than that found among the general body of working delinquents.

PER CENT OF DELINQUENT BOYS IN EACH OF FOUR CERTAIN CONDITIONS, BY SELECTED OCCUPATIONS.

Occupation.	Per cent of delinquent boys—			
	12 years of age and over.	Having both parents living.	Having fair or good homes.	Native born of native-born parents.
Delivery and errand boys	94.3	52.5	78.9	40.8
Newsboys and bootblacks	72.6	62.9	75.8	32.5
Office boys	97.8	54.3	83.7	39.1
Street venders	89.4	63.6	65.0	37.6
Telegraph messengers	94.5	58.8	78.9	42.3
In amusement resorts	98.2	41.1	66.0	42.8
Total boy delinquents working	91.3	54.6	76.2	41.2

OCCUPATIONS IN DETAIL.

Taking the different pursuits up in turn, it will be seen that among the office boys the conditions which may be called intrinsic to the work itself are on the whole good. Very few young children are employed (the comparison given above is for 12 years, but 87 per cent of the office boys are 14 or over), the proportion having both parents living barely falls below the average for working delinquents, the proportion having fair or good homes is very large, and the percentage having native-born parents is but little below the average. One would naturally expect children of this grade to keep out of difficulties with the law, and their propensity to do otherwise creates a presumption against the occupation itself. This presumption is strengthened by an examination of their leading offenses, which show a close connection with the conditions inherent in the work. Ranked according to their numerical importance, these offenses are:

NUMBER AND PER CENT OF OFFICE-BOY DELINQUENTS, BY CHARACTER OF LAST OFFENSE COMMITTED.

Last offense.	Office-boy delinquents.	
	Number.	Per cent.
Larceny	27	58.6
Incorrigibility	7	15.2
Runaway or vagrancy	6	13.1
All other	6	13.1
Total	46	100.0

The predominance of larceny becomes more striking by comparison with the other trades; even the street venders show a smaller percentage, and the newsboys fall far below, while a larger percentage is found only among the errand and delivery boys. An explanation

easily suggests itself. The office boy is very apt to be put in charge of the stamp drawer or of the petty cash or sent out to buy stamps, any one of which duties offers chances for pilfering easily and with comparatively small danger of detection. The connection between the occupation and the other two specified offenses is not so immediately apparent, but shows plainly enough on a little consideration. An English author well describes the situation:

"The characteristic evils of boy work, however, invade office work in a peculiarly subtle and dangerous form. In every city small offices are to be found in which the whole of the business, such as it is, is carried on by the master himself, who has frequently to be absent from his one-roomed office. The office boy, who constitutes the entire staff, is meanwhile left in charge. He has probably nothing to do, and spends his time either in vacancy, in mischievous expeditions along the corridor, or in reading trash of a bloodthirsty nature. He is at hand to give messages to callers or to run errands. * * * Speaking generally, he is quite without prospect."[1]

It is not surprising that the generally intractable condition known as incorrigibility should result from this state of employed idleness, or that the combination of cheap novels and energy which finds no sufficient outlet in the day's work should lead to running away.

Turning to the messengers, it is seen that they are in every respect above the average of favorable conditions. Moreover, it is well known that boys taking up this work must be bright and quick; there is no room in it for the dull and mentally weak. Plainly, then, in this case the occupation, not the kind of children who enter it, must be held responsible for its position among the pursuits from which delinquents come. The characteristic evils of the messenger's work are not so clearly reflected among those delinquents, as is the case with the office boys. The chief charges brought against it are that the irregular work and night employment tend to break down health, that the opportunities for overcharging and for appropriating packages or parts of their contents lead to dishonesty, and that the places to which the boy is sent familiarize him with all forms of vice and tend to lead him into immorality. The leading offenses among these boys are:

NUMBER AND PER CENT OF MESSENGER-BOY DELINQUENTS, BY CHARACTER OF LAST OFFENSE COMMITTED.

Last offense.	Number	Per cent
Larceny	39	53.4
Incorrigibility	15	20.5
Disorderly conduct	5	6.9
All other	14	19.2
Total	73	100.0

The complaint against the occupation on the score of health could not find either confirmation or disproof here, but larceny appears in a slightly smaller proportion than for the group of working delin-

[1] R. P. Gibbs, Problem of Boy Work, p. 33.

quents as a whole, where it is 54.5 per cent, while immorality, far from occupying a leading position, accounts for only 1.4 per cent of the delinquent messengers. Of course a boy might indulge freely in what may be called ordinary immorality without its resulting in bringing him into court, and equally, of course, a boy might receive grave moral harm which might not appear in his conduct until long after he had left the employment. The unfortunate effects of the inherent conditions of the work are, however, manifest. Its irregularity, the lack of any supervision during a considerable part of the time, the associations of the street and of the places to which messengers are sent, and the frequency of nightwork, with all its demoralizing features, afford an explanation of the impatience of restraint, the reckless yielding to impulse shown in the large percentage of incorrigibility and disorderly conduct. A glance at the main table shows that the two offenses next in order are assault and battery and malicious mischief, both of which indicate the same traits. On the whole, there seems abundant reason for considering that the messenger service deserves its bad name.

The errand and delivery boys show a less favorable state of affairs regarding extrinsic conditions. In regard to the age of the workers the occupation is above the average (73.9 per cent are 14 or over), but in parental condition it falls distinctly below. It ranks next to that of the office boys in the proportion coming from fair or good homes, and above the latter in the percentage having native-born parents. The level of favorable conditions keeps so near to the average that it seems necessary to attribute the number of delinquents it furnishes more to the conditions of the work than to the kind of children taking it up. The leading offenses are shown in the following table:

NUMBER AND PER CENT OF DELIVERY AND ERRAND BOY DELINQUENTS, BY CHARACTER OF LAST OFFENSE COMMITTED.

Last offense.	Delivery and errand boy delinquents.	
	Number.	Per cent.
Larceny	296	60.3
Incorrigibility	65	13.2
Assault and battery	24	4.9
Runaway or vagrancy	24	4.9
Disorderly conduct	22	4.5
Craps and gambling	14	2.8
All other	46	9.4
Total	491	100.0

It will be seen that the proportion of larceny is abnormally large, being not only considerably above the average but greater than in any other pursuit. The nature of the work involves trusting the boys with money and parcels and sending them in and out of stores, offices, and private houses, where opportunities abound for picking up unconsidered trifles. The comparatively small proportion guilty of the next leading offense, to which this work offers no special temptation above the others in this group, is another indication of the close connection between the character of the occupation and the

wrongdoing. The work of the errand boy affords peculiar opportunities for theft, and the percentage of larceny is larger among its delinquents than in any other of these special occupations. It has no incitements to other forms of wrongdoing greater than those offered by the other trades, and the percentage of delinquents guilty of other offenses sinks to the average level or below.

Turning to the remaining three groups, the condition of their workers is seen to be so generally below the average in extrinsic circumstances that the chance of their going wrong, no matter in what occupation they might be engaged, would be greater than for the children we have just been considering. Those employed in amusement resorts, for instance, are below the average in the matter of age, of parental condition—their showing here is pitiful, practically three-fifths of them being wholly or partly orphaned—and in the character of their homes, rising above the level only in the one respect of native-born parentage. The street venders and the newsboys rise above the average only in the one particular of parental condition. The occupational influences of these three pursuits are notoriously bad, but a partial explanation of the number of delinquents they furnish is unquestionably in the kind of children who enter them. It is a case of action and reaction. These occupations are easily taken up by immature children, with little or no education and no preliminary training. Such children are least likely to resist evil influences, most likely to yield to all that is bad in their environment. Then the presence of such children in the occupation tends to keep out a better class and to give it a still worse name. Careful parents will hesitate to let their children take up an employment in which they must have such associates, and it becomes more and more a resort for those whose parents through ignorance or indifference take no thought of the surroundings under which the work is carried on, or those who, being already semivagrants, are attracted by the irregularity of the work—the condition which some one has described as "irregular and shiftless industry"—and by the excitement of street life.[1]

OFFENSES SHOWING DIRECT CONNECTION WITH OCCUPATION: BOYS.

Up to this point the general influence of the occupation has been considered, but a further study was undertaken of offenses showing a direct connection with the occupation. This study is admittedly very imperfect, since the data which would show whether or not the offense was connected with the occupation were very apt to be unobtainable. A rigid definition of what constituted a connection with the occupation was adopted, none being assumed unless it could be shown that the wrongdoing was directly related to some condition of the particular occupation in which the child was engaged. Among the boys 356 such cases were found—24.3 per cent of the latest

[1] Vol. VIII, Juvenile Delinquency and its Relation to Employment, p. 89 et seq.

offenses committed by those working at the time of their latest arrest. The largest proportion of connection cases—52 per cent—was found among the street venders, and the next, 38.3 per cent, among the errand and delivery boys. The newsboys and bootblacks show the largest number, 129, of connection cases, and also a large proportion, 37.2 per cent. More than one-half (62.9 per cent) of the connection offenses are cases of larceny, 92 of these being found among the errand and delivery boys and 31 among the newsboys and bootblacks. Disorderly conduct accounts for nearly one-fourth (23.3 per cent) of the cases, and the remainder are scattered through the whole list of offenses.

It is a striking fact that in spite of the incompleteness of the data a direct connection between the occupation and the offense has been found to exist in the cases of practically one-fourth (24.3 per cent) of the boys employed at the time of their latest offense. It is also a striking fact that while the delinquent boys working at the time of their latest offense were scattered through more than 50 occupations, six-sevenths of the connection cases are found among those working in 9 occupations, and that more than three-fifths (64.3 per cent) come from two groups of workers—the errand or delivery boys and the newsboys and bootblacks. It is also significant that the connection cases form so large a percentage of the total cases among the street traders, the messengers, and the errand or delivery boys, their proportion ranging from over one-fourth to over one-half, according to the occupation. The most that can be said for these figures, however, is that they are indicative rather than conclusive and that they strongly suggest the need of fuller data on this highly important point.[1]

OFFENSES SHOWING DIRECT CONNECTION WITH OCCUPATION: GIRLS.

A similar study of occupational influences and connection cases among girls is hampered by the limited number of girl delinquents and by the dispersion of these through numerous occupations, giving too few in any one pursuit to warrant any definite conclusions. The largest number of those working at the time of their latest offense came from some form of domestic service—109, or 54.0 per cent. The different textile industries, hosiery, and knit goods, furnish 25, or 12.4 per cent, while stores and markets come next with 5.4 per cent.

Cases showing a direct connection between occupation and offense are proportionately more numerous than among the boys, there being 81, or 40.1 per cent of all, in which the delinquent was working at the time of the latest offense. Forty-eight, or 59.3 per cent, of these connection cases occurred among the girls in domestic service,

[1] Vol. VIII, Juvenile Delinquency and its Relation to Employment, p. 108.

and 14, or 17.28 per cent, among those in the various textile industries. Immoral conduct and larceny each appear 35 times as connection offenses, arson and vagrancy twice, and incorrigibility three times, no other offense appearing more than once. The influence of fellow employees in leading to wrongdoing is found in 31 cases, while it appeared in only 8 among the boys. The employer figures as an inciting cause in 8 cases, and other associates in 3. Neither among boys nor girls does age appear to have much bearing on the matter of connection offenses.

NIGHTWORK, HOURS OF LABOR, AND ENVIRONMENT OF CHILDREN STUDIED.

The final chapter is devoted to nightwork, hours of labor, and a further consideration of the home conditions of the delinquents. Nightwork is not unusual among the boys, 629 cases being recorded. The largest number of cases, 190, is found among the newsboys, the errand boys come next with 90, and the messengers with 51. The largest proportion of such cases is found among the children employed in amusement resorts, 71.74 per cent, and the next among hotel workers, who show 46.88 per cent; newsboys come third with 34.11 per cent, closely followed by messengers, with 31.10 per cent. Among girls the cases of nightwork reported were only 32, too scattered to have any indicative value.

The hours of work are in many cases surprisingly long. Less than one-fifth of the boys whose hours were reported worked 8 hours or less, one-fourth were working 9 hours, and nearly one-half (45.9 per cent) worked 10 hours daily. Sometimes over 11 per cent worked more than 10 hours a day, and 17 children were found working more than 12 hours daily. Three of these were under 11, and only six over 14 years. For girls the hours are not reported in as large a proportion of cases as among the boys, as in domestic service, in which so many of the girls were employed, it was difficult to determine the hours. For the 164 cases reported the proportion of girls working 8 hours or less a day was smaller than among the boys, while the proportion working over 10 hours daily was exactly the same.

The home and neighborhood conditions of the children are discussed in much detail in an effort to determine the relative weight of such factors as bad neighborhood surroundings, lack of responsible person at home, etc. The results are not wholly conclusive.

The only thing clearly indicated by the study is that among boys neighborhood influences take the leading place which among girls is held by home influences; that in general nonworkers are more

affected than workers by home conditions; that the lack of a responsible person at home, other conditions being favorable, does not appear as frequently as might be expected among the delinquents as a whole; and that this lack, combined with other unfavorable conditions, appears with most impressive frequency among the non-working girl delinquents.[1]

The report closes with an appendix giving the record forms used in the juvenile courts from which cases were taken, and the juvenile court, adult delinquency and newsboy laws of the States in which the study was made.

[1] Vol. VIII, Juvenile Delinquency and its Relation to Employment, p. 136.

CHAPTER IX.—HISTORY OF WOMEN IN INDUSTRY IN THE UNITED STATES.

This volume, which forms the ninth part of the Report on Condition of Woman and Child Wage Earners in the United States, is based mainly upon data collected from sources hitherto not generally available. The figures of the United States Census reports are used for the tables showing the extent to which women have entered the industrial field and the industries in which they are found, but the text is based to a large extent upon material located primarily through the search set up by the American Bureau of Industrial Research. Old books, pamphlets, and newspaper files have been used freely, as well as reports of State labor and statistical bureaus, the reports of legislative committees, and publications of the Federal Government. Old newspapers, magazines, and pamphlets have been used with special freedom as being less accessible than the better-known State and Federal reports.

The study is concerned with six main groups of industries: (1) The textile industries, (2) clothing and the sewing trades, (3) domestice service, (4) the manufacture of food and kindred products including beverages, (5) other manufacturing industries, including tobacco and cigar making, the paper and printing industries, the manufacture of metals of all kinds and of wood, clay, glass, and chemicals, and (6) trade and transportation.

REASONS FOR CHANGE FROM HOME TO FACTORY WORK.

In the first four of these groups women have always been employed, but the last two represent a real enlargement of their industrial field. Domestic service has been comparatively little affected by the changes of the last century, but the textile industries, the making of clothing, and the sewing trades, and to a considerable extent the industries involved in the manufacture of food and kindred products have been radically altered within that period. In all three, although in varying degrees, the women who formerly would have worked at home are now working outside their homes, under factory conditions.

For this change two main reasons are assigned—the introduction of machinery and the subdivision of labor; in addition several minor causes are given as having helped on the process. Of the two main

reasons the first and most effective was the introduction of machinery—the spinning jenny, followed by the power loom, in the textile industries, and the sewing machine in the sewing trades. These not only changed the conditions under which women worked in those particular industries, but by creating a fund or reservoir of surplus female labor, caused keen competition for employment and tended to force women into new fields.

Before the introduction of spinning machinery and the sewing machine, the supply of female labor appears never to have been excessive. But the spinning jenny threw out of employment thousands of "spinsters," who were obliged to resort to sewing as the only other occupation to which they were in any way trained. This accounts for the terrible pressure in the clothing trades during the early decades of the nineteenth century. Later on, before any readjustment of women's work had been effected, the sewing machine was introduced, which enormously increased the pressure of competition among women workers. * * * Under this pressure, combined with the rapid development of wholesale industry and division of labor, women have been pressed into other industries, almost invariably in the first instance into the least skilled and most poorly paid occupations.[1]

The second cause, closely connected with the first, for the movement of women from the home to the factory was the subdivision of labor rendered possible by the improvement of machinery. The making of an article was no longer one process demanding skill and training on the worker's part, but a series of separate operations, each, perhaps, done by a machine so simple that a girl could learn to manage it. The employment of women in textile factories, whither they had merely followed the work which had been theirs from time immemorial, had accustomed the public mind to the idea of women in extradomestic employments, and the subdivision of labor increased the number of such pursuits open to them. In addition to these two main causes various temporary and local circumstances have hastened the movement of women into the industrial field. Sometimes, especially in the printing trades and in cigar making, women have been introduced as strike breakers. Naturally, the women who thus entered a new field would not be disposed to leave it simply because the strike was over. Naturally, also, the employers who had thus obtained a fresh supply of workers who were at once cheaper and more easily controlled than men would not be disposed to return to an entire dependence upon male labor. So each new occupation which women entered in this way became in a measure their own, and the list of trades in which they might be found steadily increased.

[1] Vol. IX, History of Women in Industry in the United States, p. 13.

Another local cause of a different kind has been the scarcity of male labor at a given time or place. This was particularly effective in the early days of the factory system when the absorption of men in agriculture left the textile industry, the principal exponent in those days of the factory system, mainly in the hands of women and girls.

Times of financial depression, when the usual wage earners of a family are either unemployed or working at reduced wages, have always been effective in increasing the number of women in industrial occupations. Wars, which at once reduce the number of men available for employment and increase the number of unsupported women and children, have a similar effect.

The result of these different causes working in varying combinations has been on the whole to increase the opportunities for self-support open to women. Also the relative importance of the occupations in which they are found has undergone a change.

It is evident that on the whole there has been a certain expansion of woman's sphere—a decrease in the proportion employed in certain traditional occupations, such as "servants and waitresses," "seamstresses," and "textile workers," but an increase in the proportion employed in most other industries, many of them not originally considered as within woman's domain. There has been, for instance, an increase in the proportion of women engaged as "bookkeepers and accountants," as "saleswomen," as "stenographers and typewriters," and in "other manufacturing and mechanical pursuits," and this movement has affected, roughly speaking, all elements, according to nativity or conjugal condition, of the population of working women.[1]

WOMEN IN THE TEXTILE INDUSTRIES.

The transformation from a hand industry carried on mainly by women and children working within their own homes to a highly organized machine industry carried on exclusively in factories has been more thoroughly worked out in the group of textile industries than in any others. They have accordingly been taken as typical, and a full fourth of the report is given to their development. Three periods are recognized—the home work and handicraft stage, lasting from the first settlement of the country to about 1787; the period of spinning machinery, lasting from the introduction of the spinning jenny in that year to about 1814; and that of the complete textile factory, which, beginning with the introduction of the power loom in 1814, has continued to the present day. In the first period women worked almost exclusively in their homes; in the second, although they had entered factories, much of the work was still given out to be done at home, while in the third stage home work ceased and the

[1] Vol. IX, History of Women in Industry in the United States, p. 20.

industries were brought wholly under the factory system.[1] It is with the third period that this study is specially concerned.

HOURS AND THE EFFORT TO MODIFY THEM.

In the textile factories of the early days hours were exceedingly long. A day of 12 working hours seems to have been looked upon as reasonable and moderate, and this amount was often exceeded.

In 1826, 15 or 16 hours constituted, according to the Hon. William Gray, the working hours at Ware, Mass. * * * At Fall River, about 1830, the hours were from 5 a. m., or as soon as light, to 7.30 p. m., or till dark in summer, with one-half hour for breakfast and the same time for dinner at noon, making a day of 13½ hours. In general the hours of labor in textile factories in New Hampshire, Rhode Island, and Massachusetts in 1832 were said to be 13 a day. But at the Eagle Mill, Griswold, Conn., it was said that 15 hours and 10 minutes actual labor in the mills were required.[2]

In New Jersey and Pennsylvania the hours were equally long. In 1835 the operatives of the Paterson cotton mills struck for a reduction of hours from 13½ to 11 per day, but their strike was only partially successful. In 1833 the operatives of Manayunk, Pa., complained of their long hours, 13 a day, exclusive of time for meals. From 12 to 13 hours a day actual working time seemed to be the general rule, with occasional variations in either direction.

The operatives fought against such hours by means of public protests, by strikes, and by appeals to their State legislatures for relief. The meetings of protests, speeches, and newspaper articles aided in creating a public sentiment against such conditions, but had no direct effect upon them. The strikers were sometimes successful, more often not; but even when they succeeded the gains thus secured were apt to be lost as soon as an industrial depression, or even a period of slack time, appeared. Legislative action seemed the only method of controlling the evil, and for years a campaign for a 10-hour law was waged.

For some time legislative action seemed as ineffective as the other methods which had been tried, for the early laws were so worded that they failed to accomplish their purpose. In 1847 New Hampshire passed a 10-hour law, and within six years Maine, Pennsylvania, New Jersey, and Rhode Island had followed her example. But most of these laws safeguarded the liberty of the individual by providing that, although 10 hours should constitute a day's work, any operative might, if he chose, contract to work for a longer time. The companies promptly discharged those who did not choose to

[1] The arts and crafts movement has done something toward reestablishing certain forms of textile work in the home, but it is not as yet sufficiently widespread to affect the general situation.

[2] Vol. IX, History of Women in Industry in the United States, pp. 62, 63.

make such a contract, and in some cases established a blacklist against them. There was an outburst of strikes, but the employers had the advantage of position, and these laws remained dead letters.

Then followed 20 years of confusion. The operatives never gave up the fight for a shorter day, and as it became evident that sooner or later they would secure effective laws, the employers in various localities made an effort to head off the movement by voluntarily reducing hours. Generally a day of 11 hours marked the extreme limit of concession; occasionally a day of 10½ hours was granted, but it was not usually long maintained. Gradually, however, effective legislation was secured and working hours were permanently reduced.

In general the hours of labor in Massachusetts, in spite of the lack of legislation, were reduced first, other States following. When the mills of Massachusetts ran 12 hours a day, "those of Rhode Island and New Hampshire ran 13 hours. When her mills came down to 11 hours a day, theirs came down to 12." The early laws of the other States were, indeed, practically dead letters owing to their contracting-out clauses. In Massachusetts, where the leaders of the 10-hour movement insisted upon effective legislation, the manufacturers reduced hours to prevent the enactment of laws. But even there the women employed in textile factories generally worked 11 hours a day until prevented by legislation. Since 1874, however, the large manufacturing States have one by one regulated the hours of labor of women in manufacturing establishments, with the result that the working time is decidedly shorter.[1]

INTENSITY OF WORK.

Apparently in the early days of the textile factories it was customary for woolen weavers to tend only one loom and for cotton weavers to tend two, but between 1830 and 1840 a movement to increase the number assigned to a single worker became apparent and has steadily progressed. A strike has been a common form of protest against such increases, but such strikes have rarely been successful. The increase was often offered under the guise of a favor.

In 1836 the women weavers in a factory at Norristown, Pa., who were on strike against a reduction of wages, were offered "an additional loom, that they may make up by increased labor what they lose in prices." The offer was condemned, however, by the strikers. In 1869 the same offer was made by the Dover company to its striking employees, but this time the increase was to be from 6 or 7 to 8 looms.[2]

Similar increases in the number of machines to be cared for were made in the other departments, so that throughout both cotton and

[1] Vol. IX, History of Women in Industry in the United States, pp. 72, 73.
[2] Idem, p. 100.

woolen mills the women employees are working far more continuously, more rapidly, and under a much greater strain than was the case in the early days of the industry.

WAGES.

At first women could earn considerably higher wages in textile factories than in any other occupation open to them.

Before the introduction of manufactures, according to Aiken, the ordinary rate of women's wages in New England was from $2.17 to $3 a month and board. By 1833 men's labor would command, he said, 50 per cent more than formerly, but women's wages had risen from 200 to 300 per cent.[1]

In other words, by 1833 women might expect to earn from about $6 to $9 a month and their board. In the textile factories their wages were somewhat higher than this. From 1833 to 1850 it is said that their wages in such factories averaged about $2 a week with board, which, including lodging, heat, light, and washing, was worth from $1.25 to $1.50 a week. This average changed but little until the time of the Civil War, when both wages and prices rose. Between 1860 and 1866 the wages of women spinners, weavers, warpers, speeders, spoolers, etc., were increased from 50 to 100 per cent. Retail prices, however, increased from a basis of 100 in 1860 to 202 in 1866, so that in spite of the nominal increase in wages there was a real and serious falling off in their purchasing power. Wages continued to rise until the early seventies, when came a pause, followed by a decrease in the late seventies.

Very little idea of the real value of the early wages is obtained from a statement of their amount in dollars and cents, since the purchasing power of money has changed so greatly since those days. Without going into an elaborate consideration of prices, a certain measure of the wage value can be obtained by considering the cost of board. The average wage of women textile operatives was $2 and board, the latter being considered worth from $1.25 to $1.50 a week. In other words, after paying for board, which included lodging, heat, light, and at least part of her washing, the average worker found herself with something over half her week's wages in hand.

RELATIVE PROPORTION OF THE SEXES.

In the handicraft stage women and girls had the greater part in the manufacture of textiles, all the spinning and much of the weaving being in their hands. It is difficult to secure exact data for the period during which spinning machinery without the power loom

[1] Vol. IX, History of Women in Industry in the United States, p. 73.

was in use, but there is abundant evidence that in the early days of the complete textile-factory system women constituted the major part of the employees, and that relatively they have lost ground in the textile industries within the last 50 to 75 years. This movement has not been uniform throughout the different industries.

In 1816 a report rendered to Congress gave the following figures showing the age and sex distribution of cotton-mill operatives:

Males employed from the age of 17 and upward	10,000
Women and female children	66,000
Boys under 17 years of age	[1]24,000

By 1831 women formed about 58 per cent of the cotton-mill employees—62.6 per cent of those who were not "children under 12 years," who were not classified by sex. This proportion of women showed but little change up to the time of the Civil War. The rush of men into the army left numerous positions open to women in which they could earn more than in millwork, and at the close of the war the rapid opening up of the West had the same effect. The class of women from whom the famous mill girls of Lowell were drawn had left the mills, probably forever, and immigrants—men as well as women and more numerously than women—filled the vacant places. Along with this substitution of foreign for native operatives has come the introduction of increasingly complicated and difficult machinery, the operation of which "requires the care of men because it is beyond the physical and nervous capacity of women." Consequently in the manufacture of cotton textiles there has been a slow but steady decrease in the proportion of women employed, the percentage they form of the total employees having fallen from 58 in 1831 to 40.2 in 1905.

In the manufacture of woolen goods men have always, under the factory system, formed a larger proportion than women of the total employees, but relatively they are more important now than in the early days. In Massachusetts in 1837 and again in 1845 the woolen-mill employees were nearly equally divided between the sexes, though men showed a slight excess. In 1850 the United States Census gave the proportion of female hands in all wool manufacture except hosiery and knit goods as 41.5 per cent; by 1905 their proportion was nearly the same, 40.1 per cent. In the manufacture of hosiery and knit goods the proportion of female workers has always been high but has fluctuated considerably. Before the introduction of machine knitting women had a practical monopoly of this branch, but with the use of machinery men entered it in considerable numbers. So far as known females have never formed

[1] Vol. IX, History of Women in Industry in the United States, p. 30.

less than half of the total employees, and usually their proportion has been nearer three-fifths. In 1905 they formed 66.4 per cent of the total number of employees. In the manufacture of silk and silk goods the proportion of women employed has on the whole increased, rising from 53.1 per cent in 1870 to 56.8 per cent in 1905. This gain seems to have been made wholly at the expense of children, the proportion of men having increased more than the proportion of women during this period.

The various minor textile manufactures differ in this respect, but, taking the whole group of textile industries, women have very evidently lost ground. In 1850 they formed 50.2 per cent of all employees in textile industries, while in 1900 they formed only 40.6 per cent. In this particular industry their presence in the factory has not meant that they are taking work from the men but that men are gradually taking work from the women.

SUMMARY OF SECTION.

Since the establishment of the complete factory system, beginning about 1814, the employment of women in textile factories has been common. During this period hours of labor have been diminished, but intensity of work has been greatly increased. The industry has passed almost wholly from the hands of native workers to immigrants or their children. The wages of women have shown a nominal increase; this has not meant wholly a gain, owing to a decrease in purchasing power; and the proportion of women employed in textile factories has shown a steady decrease, their places being taken by men.

CLOTHING AND THE SEWING TRADES.

Most of the garment-making and sewing trades present a very different history from the textile industries, partly because machinery was not introduced until a much later date—the sewing machine was not in general use until after the middle of the century—and partly because when introduced it was of such a character that there was little or no economy in carrying on the work in factories. For the manufacturer, indeed, there was decided economy in giving out the work to be done at home, as this greatly reduced the fixed charges of the business. The great subdivision of labor which has developed as the trade in ready-made garments has grown diminishes the saving secured by home work, and the workers themselves in some trades have fought vigorously against giving out work, as lending itself to the sweating system and tending to reduce wages below the subsistence point. At present the sentiment of the workers and of the best class of employers is against home work, but in none of these trades has home work been entirely eliminated, although in the boot and shoe industry it is now very unusual.

BOOT AND SHOE MAKING.

Apparently in this industry there has been a real incursion of women into a field formerly occupied by men, but this incursion began at an early date.

About 1795, or earlier, * * * shoemakers, or cordwainers as they were called, began to hire their fellows and to gather them into shops, where a rough division of labor was practiced. Soon afterwards they began to send the uppers out to women to be stitched and bound. From that time until the introduction of the sewing machine the binding of shoes manufactured for the wholesale market was practically a woman's industry, carried on at home.[1]

A few other branches of the work were sometimes turned over to women. In Brockton, for instance, they were employed in pegging boots and shoes, and in New York "fitting, which consisted of sewing the bootlegs together, putting in the lining and straps and generally making the boots ready for bottoming, was generally done by women and children at home." Binding, however, was their great occupation, and continued to be so until the introduction of the sewing machine, between 1855 and 1865.

This led to the introduction of the factory system, and at first to a great displacement of women workers, as the machines were heavy and difficult to operate. Between 1850 and 1860 the proportion of female workers in the industry fell from 31.3 per cent to 23.2 per cent, and by 1870 it had sunk to 14.1 per cent. This was their lowest point. Further improvements in machinery combined with extreme subdivision of work created numerous occupations well within woman's strength and ability, and each census since 1870 has shown an increase in the proportion women furnish of the total employees. In 1905 their proportion was a little over 33 per cent.

WAGES, EARNINGS, AND CONDITIONS OF WORK.

During the period of home work piece rates prevailed, and these varied according to the degree of competition. In the small shoe towns of New England apparently the binders received what they considered fair returns, but in the large cities there was constant complaint that they could not earn enough to live on. Moreover, they were subject to numerous petty impositions, such as charges for needles, silk and thread, the withholding of part of their earnings, etc. In 1853 it was estimated that an expert binder in New York, working from 14 to 17 hours a day, could net $2.40 a week. "This was said, however, to be higher than the average price paid hundreds of girls and women in New York."

[1] Vol. IX, History of Women in Industry in the United States, p. 167.

Under the factory system earnings appear to have been much better and the general conditions at least fair.

As an occupation for women, boot and shoe making has been rescued by machinery and the factory system from the degradation of the other sewing trades and has been placed upon a level with the textile industries. Wages, indeed, in boot and shoe factories have been higher upon the whole than in cotton mills, and the competition of the foreign born has not been so great as in the textile industries.[1]

GARMENT MAKING.

In the manufacture of ready-made garments the factory system has only recently made headway, having as competitors both home work and the sweating system. On the whole the worker's progress seems to be from the home to the sweatshop and from the sweatshop to the factory, but the three stages are found existing side by side in the same industry.

Garment making includes a number of different industries in different stages of development, struggling with different problems of organization. Conditions in many of these industries have been notoriously bad from very early days.

Five elements, home work, the sweating system, the contract and subcontract systems, increasing the number of middlemen between producer and consumer, the exaggerated overstrain due to piece payment, and the fact that the clothing trades have served as the general dumping ground of the unskilled, inefficient, and casual women workers, have produced from the very beginning of the wholesale clothing manufacture in this country a condition of deplorable industrial chaos.[2]

Up to 1850 all garment making was done by hand and the ready-made garments were of the poorer and rougher quality. The garments were usually cut and given out for home making. Any woman who had an elementary knowledge of needlework might be a competitor for the work, and consequently rates were cut until earnings were often below the subsistence point. The larger part of this study deals with the almost incredibly low piece rates paid and the efforts to secure some improvement in this direction.

These efforts had only partial and temporary effects. The almost unlimited supply of potential home workers and the impossibility of any organization on their part kept wages down and increased hours of work in spite of all protests until the partial introduction of the factory system did away with the worst abuses of the home-work system, but the sweating system remained to make conditions in some branches all but intolerable for the workers. Of late years this system seems to have been losing ground.

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[1] Vol. IX, History of Women in Industry in the United States, p. 174.
[2] Idem, p. 117.

Division and organization of labor, aided on the one hand by the economies of large scale production and on the other hand by laws regulating the sweating system must be held primarily responsible for the movement toward the factory system in the garment trades.[1]

OTHER SEWING TRADES.

There appears to be a general tendency for the factory system to supplant home work, but this tendency has developed much further in some industries than in others. The making of collars and cuffs has been transferred wholly to the factory. The manufacture of gloves is in Chicago a factory industry, but in New York a considerable amount of the work is given out to be done at home. Millinery and the manufacture of artificial flowers are entirely unstandardized. The making of hats and caps is confined to factories. Thus the situation varies from industry to industry, so that no general statement is possible.

RELATIVE PROPORTION OF THE SEXES IN SEWING TRADES.

On the whole the proportion women form of the total workers in clothing and sewing trades has shown a slight increase during the period for which comprehensive statistics can be secured, rising from 49.5 per cent in 1850 to 55.9 per cent in 1900. This has been coincident with a falling off in the proportion they form in most of the trades listed in 1850. Thus in that year they formed 63.7 per cent of the workers on men's clothing and 92 per cent of those engaged on millinery and lace goods as against 47 per cent and 83.2 per cent in the same trades in 1900. The increase in their proportion of the total seems due mainly to the inclusion in later censuses of trades which were so entirely home industries in 1850 as not to be included. Thus shirt making, which is not listed at all in 1850, employed 31,074 women wage earners in 1900, and women's clothing in its two branches of dressmaking and factory product, which does not appear in the 1850 census, had in 1900 a total of 97,701 women workers.

An examination of the data given shows some ground for believing that as the factory system becomes established in the different trades the same process is going on which has been so apparent in the textile trades—the gradual substitution of men for women.

OTHER GROUPS OF INDUSTRIES.

Domestic and personal service has never been organized to such a degree that it is considered an industrial pursuit. Its principal

[1] Vol. IX, History of Women in Industry in the United States, p. 155.

point of interest is its decreasing importance as a gainful pursuit for women. In 1870 it employed 58.1 per cent of all the female breadwinners 10 years of age and over, but by 1900 its proportion had sunk to 39.4 per cent.

The industries comprised under the heading "Other manufacturing industries" are treated very briefly. In general in the earlier part of the last century women entering any of these industries found hours as long as in the textile industries and wages lower. Often, too, they met with active hostility from the men of the different trades, who looked upon them as interlopers. Rather generally they came in as unskilled workers, taking the lowest-paid work in the industry. They have profited by the improved conditions brought about by labor organizations, legislation, and the good will of employers, but usually they still retain the less skilled and less profitable occupations.

In most of these industries women upon entering took, usually at a reduced wage, work which up to that time had been considered peculiarly men's. Cigar making is an exception to this generalization, since it had begun as a household industry carried on largely by women. The first result of the introduction of the factory system was to diminish the number of women employed in this industry to such a degree that when in the latter half of the nineteenth century women entered it in numbers, their entrance was bitterly opposed on the ground that they were taking men's work.

In entering the various occupations grouped under the heading "Trade and transportation," women secured a real enlargement of their field. As saleswomen, stenographers, typewriters, bookkeepers, and shippers and packers, they have entered occupations which in their mothers' days either did not exist or were looked upon as wholly unsuited for women. To the latter class belongs the work of saleswoman. Again and again in the early part of the last century the employment of saleswomen instead of salesmen was urged as a means of relieving the terrible pressure in most occupations open to women, but up to the time of the Civil War the proposal fell on deaf ears. Even in 1870 saleswomen were too small a body to be given separately in the census classifications; in 1900 they numbered 142,265. The long hours of service, the low wages, the frequent fines, and the strain of the continuous standing often required are such grave drawbacks that the suitability of women for the work has been seriously questioned. These and kindred objections, however, are gradually diminishing under the pressure of public opinion working partly through legislation, partly outside of it, and women appear to be permanently established in this vocation. Stenographers, typewriters, and bookkeepers as skilled, or, at worst, partially trained

workers have never been subjected to the almost unlimited competition which prevails among saleswomen, and their conditions as to wages, hours, and the like have been more favorable.

CONCLUSION.

The general impression left by a survey of the different industries in which women have followed or are following their work from the home into the factory is that on the whole the change has meant an improvement in the condition of the women workers.

The history of woman's work shows that their wage labor under the domestic system has often been under worse conditions than their wage labor under the factory system. The hours of home workers have been longer, their wages lower, and the sanitary conditions surrounding them more unwholesome than has generally been the case with factory workers. The movement away from home work can hardly, then, be regretted.[1]

There appears to have been relatively little real displacement of men by women. There has been some, but in only a few industries. Having been forced out of their traditional sphere primarily by machinery and secondarily by men introduced as the result of the readjustment due to machinery, women have in some cases followed the machine into other occupations not theirs by tradition. But much of their problem of employment has been solved by the growth of new industries, many of which women have entered almost if not quite from the beginning and in which they have successfully held their own.

[1] Vol. IX, History of Women in Industry in the United States, p. 21.

CHAPTER X.—HISTORY OF WOMEN IN TRADE-UNIONS.

This volume, the tenth part of the Report on the Condition of Woman and Child Wage Earners in the United States, traces the rise and development of trade-unionism among women in the United States from its first recorded manifestations down to the present day. The sources of the study of the earlier periods are largely files of old newspapers, pamphlets, and labor papers located through a search set up by the American Bureau of Industrial Research. The data concerning conditions of the present day were obtained in part by personal investigations and in part by correspondence with the officials of women's unions.

FOUR PERIODS OF DEVELOPMENT.

The history of women in trade-unions is divided into four parts: (1) The beginnings of organization, extending from 1825 to about 1840; (2) the development of associations interested in labor reform, including the beginnings of legislative activity, 1840 to 1860; (3) the sustained development of pure trade-unions and the rise of the struggle over the suffrage, 1860 to 1880; and (4) the present period, including the impress and educative influence of the Knights of Labor, and the present development under the predominant leadership of the American Federation of Labor.

FIRST PERIOD: 1825 TO 1840.

In the history of the two earlier periods, the term "trade-union" is apparently used to cover any associated activity on the part of working women, whether or not they were organized; in the first period especially, strikes are the chief form of united action of which any report is given, and these appear to have been undertaken quite frequently without any preliminary organization. In the second period, working women seem to have banded themselves together not infrequently, but their efforts covered a wider field than is customary in trades-unions to-day. In the third period the unions had taken on their present form, and the chief difference between the third and fourth period is the greater stress laid during the last 25 or 30 years on protective legislation.

COTTON-MILL OPERATIVES.

In the first period the cotton-mill operatives were more conspicuously active in strikes and organizations than any other women workers. The earliest manifestation of which a record has been found was a strike in July, 1828, in the cotton mills of Paterson, N. J. Its immediate occasion was nothing more serious than a change of the dinner hour from 12 to 1 o'clock.

The children, apparently including a large number of girls, disliked the new arrangement and promptly marched out at 12 o'clock, "huzzaing." Encouraged by their parents and guardians they turned the afternoon into an unexpected half holiday. The next morning found the strike extended to carpenters, masons, and machinists in a general demand for a 10-hour day.[1]

The strike was lost and there is no evidence that it led to any organization among the employees.

In December of the same year there was a more serious strike among the cotton operatives of Dover, N. H., as a protest against new factory rules which they considered oppressive. This strike also was lost, but apparently the idea of organization took root among the women about this time, for when in 1834 the operatives again struck, this time against a reduction of wages, the newspapers asserted that the girls had formed a trade-union for mutual support in spite of the "conditions on which help is hired by the Cocheco Manufacturing Company." The most important of those conditions was an agreement not to engage in any combination by which work might be impeded or the company's interest injured.

This effort to prevent the spread of trade-unionism among the women is the first instance of which we have record where employers forced upon women employees the dreaded "ironclad oath." Its use at this early date indicates that working women had made much greater progress toward organization than has been generally supposed.[2]

This strike also was lost, and it is impossible to trace the fate of the union which had been formed.

In Lowell in the same year the factory girls struck against a reduction of wages and formed a union, which apparently did not long survive the loss of the strike. Several other ephemeral unions were formed, generally at the time of a strike, in various cotton manufacturing towns, but their influence seems to have been small.

WORKERS IN OTHER INDUSTRIES.

Women in the textile industries were most prominent in the trade-union activity of these early days, but experimental beginnings were made by women employed in other lines. The tailoresses and seam-

[1] Vol. X, History of Women in Trade Unions, p. 22.
[2] Idem, p. 25.

stresses of New York began holding meetings as early as 1825, and by 1831 they are reported to have "clubbed together for self-protection against the inevitable consequences of reduced and inadequate wages." In June of this year they struck for an elaborate list of prices. It was currently reported that this strike involved 1,600 women and that they remained out for at least four or five weeks and probably longer. Apparently the union did not hold together long, but for six years to come occasional notices appear of meetings of tailoresses, generally to form benevolent or charitable associations. In Baltimore and Philadelphia temporary organizations were formed, but nothing permanent was accomplished.

The umbrella sewers and bookbinders of New York both had strikes during this period, and the latter formed in 1835 a union which, so far as public records are concerned, disappeared shortly after its formation. The shoe binders of Lynn formed a union in 1833 which was much better organized than was usual in those days. The organization included about 1,000 women, who agreed to pay quarterly dues amounting to 50 cents a year, and to abide by the union scale of prices, which was soon adopted by the employers. A few months later, however, the union had declined in influence. Three-fourths of the original members had dropped out of the organization, either by nonpayment of dues or in order to accept lower prices for binding shoes. Soon after the union went to pieces completely.

On the whole, the most that can be said for this period is that the idea of organization as a possibility for women was taking root, but it had not as yet become a force to be reckoned with. The organization of women workers was as yet experimental, and it required the experience and education of later years to furnish the discipline necessary for sustained trade-union activity.

The attitude of men trade-unionists during this initial period depended upon the firmness with which women were established in the trades. Where they were just beginning to enter a trade in competition with men, the men opposed them vigorously; but when they were once established as permanent factors in any given trade, the men encouraged their organization in order to prevent the lowering of wage standards.

SECOND PERIOD: 1840 TO 1860.

This was a period of enthusiasms and theories, in which schemes for the reconstruction of the social order abounded and in which the thought of reformers was deeply colored by a humanitarianism somewhat vague in its purpose, but all embracing in its scope. The working women were influenced by the general trend of the times, and

their characteristic activity during the period was the formation of labor reform associations composed chiefly of textile mill workers but including also representatives of the cap makers, shoemakers, and tailoresses and seamstresses. These associations were educational in character to an unusual degree and reflected the general tone of humanitarianism which pervaded the reformative efforts of the day. But they also organized a number of successful strikes, secured increases in wages, helped to reduce the length of the working day, and took an important part in agitating for protective legislation. Unions of this kind existed in Lowell, Manchester, Dover, Fall River, and New York, and furnished the machinery for the expression of trade-union activity during this period. They marked the height of organization among cotton-mill girls, and Lowell was the center of this organization activity.

FEMALE LABOR REFORM ASSOCIATIONS.

The Lowell Female Labor Reform Association was organized January, 1845. It apparently came into existence as a result of the agitation for shorter hours and higher wages that accompanied the strikes of cotton-mill operatives in the early forties. Its president, Miss Sarah Bagley, who had herself worked for 10 years in the New England cotton mills, was a woman of unusual charm and ability. She was the most prominent organizer of women wage earners during this period, and represented her local at several national conventions.

Under her leadership the Lowell union soon reached a membership of between four and five hundred and carried on an active propaganda. Not satisfied with securing thousands of signatures of factory operatives, who petitioned the legislature for a 10-hour day, prominent members of the union, including Miss Bagley, went before the Massachusetts legislative committee early in 1845 and testified as to the conditions in textile mills. This was the first American governmental investigation of labor conditions for adults, and it was due almost solely to the petitions of the working women. Stung by the indifference of the chairman of the legislative committee, who chanced to be the representative in the legislature from the Lowell district, the association published scathing resolutions condemning him, and a few months later secured his defeat at the polls. In spite of many discouragements, the agitation was continued, and this union of working women did much to push Massachusetts to the front in labor legislation.

In December, 1845, the Female Labor Reform Association of Manchester was organized among the women cotton-mill operatives, with the help and cooperation of the Lowell association, and its members

went to work energetically to convince the public of the justice of their demands for shorter hours and better pay. They engaged a public lecturer to aid in diffusing and maintaining the principles of their cause. In less than a year they had 300 regular members. In the interest of the 10-hour law they secured and presented to the legislature a huge petition and by vigorous personal work they more than any other group secured the New Hampshire 10-hour law of 1847, the first of the kind in this country. The relations between this association and the men of the mills seem to have been very cordial.

During the first half year the male and female associations of Manchester met separately, but thereafter met together, since, as the secretary of the female association expressed it, "We can devise plans together to better advantage, seeing men can do nothing without us and we can not do much without them."[1]

Female labor reform associations were organized also in Dover, N. H., and in Fall River, Mass. These sent representatives to important conventions, but little is known of their local activities.

Aside from these New England unions the principal organization movement of the period was in New York, where the Female Industrial Association was organized in 1845. This union was not confined to any particular trade, but included representatives from the tailoresses, seamstresses, crimpers, book folders, and stitchers, fringe and lace workers, and others. In Philadelphia the work of the female labor reformers took a cooperative turn. The leaders furnished courses of lectures on the labor question, sent delegates to the national labor congresses, and carried on an effective educational campaign.

STRIKES DURING PERIOD.

Strikes were fairly numerous among the women workers of this period and were remarkable for the hopefulness, the determination, and the daring with which they were conducted. The Boston seamstresses struck against a reduction of wages in 1844 and won. Capmakers, shoemakers, and shirtmakers all had strikes or attempted strikes during the period, but the textile operatives used this method more than any other class of workers. The most interesting strikes were those occurring among the cotton workers around Pittsburgh in 1848.

It was the culmination of six long years of struggle to secure adequate wages, reasonable hours, and fair conditions, and the experience of the Pittsburgh women was typical. In the early forties these women had gone on strike for higher wages and the abolition of the store-order system. In 1843 they protested unsuccessfully

[1] Vol. X, History of Women in Trade Unions, p. 78.

against an increase in the number of hours of labor without an increase in wages. In 1844 they struck against a reduction in pay. In 1845 they abandoned the attempt to regulate their wages and united on an attempt to secure the 10-hour day. When started back to work on the 12-hour system they secured a promise from their employers that no objection would be raised against a continuance of the 10-hour agitation.[1]

Under the promise efforts for legislative relief were carried on until a law was passed to become effective July 4, 1848, declaring that no one in the cotton factories should be "holden or required" to work more than 10 hours a day without a special contract. The employers promptly closed their factories against any who refused to work under the 12-hour system, and a series of strikes followed, some of which were marked by extreme bitterness and considerable rioting. Finally, a compromise was effected, the mills running only 10 hours, but wages being reduced by one-sixth.

The adoption of the 10-hour day was regarded as "victory No. 1" by the girls, who predicted that wages would be raised to the 12-hour rate "after the next legislature perfects the law and the manufacturers discover that they can afford it."[2]

THIRD PERIOD: 1860 TO 1880.

During these 20 years there was much direct trade-union activity among women, but it was a time of economic and industrial disturbance and readjustment, and the women's unions, like the men's, suffered severely in the depression following the panic of 1873. Up to this time the textile operatives had been leaders in the matter of organization among women, but now they fell far behind, owing partly to the withdrawal from the mills of the native American girls and the coming in of immigrants of lower standards. As an offset to this, the movement toward organization showed itself in an increasing number of industries, and women's unions spread far more widely than in any preceding period.

Organization of women during this period was carried on chiefly among the cigar makers, tailoresses and seamstresses, umbrella sewers, cap makers, textile workers, printers, burnishers, laundresses, and shoe workers. The last named formed a national union known as the Daughters of St. Crispin. This was very successful for a time, but died out in the hard times following 1893. Among printers and cigar makers women were admitted to the national unions, but in the other trades they were excluded from these. They had several State organizations of their own, but most of their activities were carried on in local unions.

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[1] Vol. X, History of Women in Trade Unions, p. 69.
[2] Idem, p. 65.

ORGANIZATIONS IN SEPARATE TRADES.

Women came into cigar making in large numbers during this period. Their presence was for a long time bitterly resented by the men of the trade. Apparently the leaders recognized the uselessness of attacking their presence and by 1867 the Cigar Makers' International Union, which had been formed three years earlier, admitted them to membership, but local unions continued to oppose the employment of women. By the end of the period opposition had been practically worn away, and the male cigar workers had considered it was better to work with the women than against them.

In September, 1879, Adolph Strasser, the president of the international organization, said in his annual report: "We can not drive the females out of the trade, but we can restrict their daily quota of labor through factory laws. No girl under 18 should be employed more than eight hours per day; all overwork should be prohibited * * *." Thus the trade union, in its inability to protect its members, male and female, from the results of increasing competition, had already turned for relief to the protection of labor legislation.[1]

Tailoresses and seamstresses were in a worse condition than ever during the first part of this period, as their numbers were increased far beyond any possible needs of the trade by the entrance into their ranks of thousands of "war widows." In Philadelphia, Cincinnati, Detroit, Chicago, Baltimore, New York, and Boston temporary unions were formed among them, largely through the efforts of sympathetic outsiders, but these unions drifted almost immediately into schemes for cooperative manufacture, which in turn met with but temporary success.

The women printers were especially active in union work during this period. Their entrance into the trade had been strenuously opposed by the male printers, and they not infrequently gained admittance as strike breakers. Once in, however, they took kindly to the principles of trade unionism. They formed strong unions of their own and then by combined action forced their way into the International Typographical Union. In 1869 the first charter granted by any men's trade union to women in the same trade was secured by the Women's Typographical Union, No. 1, of New York. The president of this local union, Miss Augusta Lewis, was elected corresponding secretary of the international organization, a distinction unique in the annals of the craft.

The laundry workers of Troy, N. Y., formed one of the most successful organizations of the period. In 1866 they were strong enough to contribute $1,000 to sustain the iron molders then on a

[1] Vol. X, History of Women in Trade Unions, p. 94.

strike, and during the next three years they increased wages, reduced the hours of labor and greatly improved conditions.

According to contemporaneous accounts, the work of the Troy laundry women was "to stand over the washtub, over the ironing table, with furnaces on either side, the thermometer averaging 100°, for wages averaging from $2 to $3 a week." "At last," said one writer, "they formed a trade union, whereby, through their own exertions and their faithfulness to their organization, they increased their wages to $8 to $14 a week by working on an average from 12 to 14 hours a day."[1]

FOURTH PERIOD: 1880 TO 1908.

WOMEN IN THE KNIGHTS OF LABOR.

The Knights of Labor was the first large organization which systematically encouraged the admission of women to membership on an equal footing and with equal powers with men. It began as a secret society among the garment workers of Philadelphia in 1869, but in 1878 a movement was started to make its appeal wider and its hold stronger upon the working class. At this time the Knights of Labor stood squarely for the organization of mixed assemblies on the ground that such a mingling of the representatives of different trades would tend to develop an appreciation of the solidarity of labor, but it never insisted upon an intermingling of the sexes, and the first woman's union formed under the order was composed of representatives of a single trade. Of all the women's trades represented in the organization—and every conceivable branch of industry was included—the shoe workers were most prominent and best paid. Many of them had been trained for united action under the Daughters of St. Crispin, and they were strongly influenced, too, by the male leadership of the Knights of Labor, which was drawn to no small degree from the shoemakers' craft.

The first local assembly of women under the Knights of Labor was organized in September, 1881. Several new unions were added during the following year, and the number increased steadily until May, 1886, when 27 locals composed entirely of women were added during a single month. Then the decline began, and during the next half dozen years practically the whole strength of female unionism under the Knights of Labor disappeared.

It is extremely difficult to gain any idea of how extensively women were organized under the Knights of Labor. It is estimated that in 1886 the female membership was about 50,000; two years later it is believed that this had sunk to between 11,000 and 12,000. Thereafter there are no data on which to base even a guess as to the number of female members.

[1] Vol. X, History of Women in Trade Unions, p. 100.

WOMEN'S TRADE-UNIONS, 1890–1908.

The general progress of the movement toward organization of women in industry after the disruption of the Knights of Labor, which commenced about 1890, falls into two distinct periods: A time of growth from about 1890 to about 1902 or 1903, and after that a period of marked decline. The downward movement reached its period of deepest depression in the year with which this study closes, 1908, but a supplementary chapter calls attention to the fact that, beginning in 1909, there was a marked revival of interest in trade-unionism among women:

> Since 1909 there has been a most marked growth in the number of women's unions, a still larger growth in the membership of the unions, and an improvement, the most marked of all, in the general interest taken in women's unions in all portions of the country and in almost all trades in which there is any organization at all.[1]

The growth of the movement from 1890 to the early part of this century was merely a natural development from the experience of the earlier period, helped on by the attitude of the male workers, who had apparently made up their minds that women must be looked upon as a permanent factor in the industrial world and that it was better to have their cooperation than their competition. The decline is accounted for as a direct result of the hostility of employers, which was exerted as soon as the women's unions became strong enough to influence conditions. Up to 1900 the unions were weak and attracted little attention.

As they grew stronger, however, strikes for higher wages or shorter hours, or other improved conditions, grew more common, and by 1902 we find more than three times as many strikes ordered by women's organizations as in 1900. In other words, by this time the women's unions had become strong enough to rouse the opposition of the employers, and the rapid decline in the number of strikes in the following years shows how successfully this opposition was exerted. * * * In cases where a union label will help the sale of goods employers often countenance a union for the sake of a label, but elsewhere their objection to the organization of their women employees is pronounced and usually effective. It is difficult to find an instance where a women's union of any size has been able to maintain itself against the opposition of its employers. The chief apparent exceptions are the unions connected with or morally supported by effective men's organizations.[2]

This opposition, it is explained, is only what men's unions encountered but lived through in their earlier days. The causes of the revival of the movement are not so apparent.

The gain seems to have come suddenly. There was little evidence of real vitality or dynamic force in the period prior to 1909. But

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[1] Vol. X, History of Women in Trade Unions, p. 221.
[2] Idem, p. 150.

in the winter of 1908–9 the leaders of women's unions realized that the efforts of the past years had taken root. Court decisions adverse to labor and the prevalence of unemployment just at this time probably had considerable effect in making women, as well as other workers, conscious of a common cause and of a new sense of responsibility to their fellow workers.[1]

Women in general organizations.

During this period women are found enrolled in three general organizations, i. e., organizations which cover the whole industrial field as well as in unions formed within separate trades. The three general organizations are the American Federation of Labor, the National Women's Trade Union League, and the Women's International Union Label League.

The American Federation of Labor put itself upon record in early days as favoring the organization of women. In 1885 resolutions were introduced at a national convention calling upon women to organize and offering assistance in that direction whenever opportunity should offer. In 1890 a woman was sent as delegate to the national convention from the Clerks' Union in Findlay, Ohio, and in 1891 a committee on women's work was appointed, having a woman as chairman and a woman also as secretary. In 1900 a woman was appointed a general organizer and made assistant editor of the Federationist, the official organ of the federation. From 1903 onward every convention has favored the appointment of women organizers, the appointment being left to the council.

The National Women's Trade Union League was organized in 1903 for the purpose of uniting in one national organization all working women, whether already in unions or not, and sympathizers with the movement outside of the ranks of labor. During 1904 State branches were formed in Illinois, Massachusetts, and New York, but the league shared in the general depression which affected trade-unionism among women at this time, and it was not until 1908–9 that it began to show a rapid and apparently well-rooted growth.

The league has the great advantage of being a movement of women for women. Its leaders are women widely known as friends of their wage-earning sisters. Their connection with the movement inspired confidence, and in their respective States the Women's Trade Union Leagues soon became the centers of effort for the improvement of women's conditions along trade-union lines. The league is closely affiliated with the American Federation of Labor, but is an independent association with its own national and local officials, its own headquarters, and its own publication, Life and

[1] Vol. X, History of Women in Trade Unions, p. 221.

Labor. The platform of the Chicago league, which is typical, was adopted in 1908–9 and is as follows: (1) Organization of all workers into trade-unions, (2) equal pay for equal work, (3) the eight-hour day, (4) the minimum-wage scale, (5) full citizenship for women, (6) all principles embodied in the economic program of the American Federation of Labor.

The growth of the league was very rapid in the period immediately following 1908.

In Chicago the individual membership of the league is now (September, 1911) about 900 and the affiliated membership 25,000, of whom 15,000 are women. In New York City the league's individual membership is 630 and the affiliated membership 55,184, of whom 20,029 are women.[1]

The Women's International Union Label League was organized in 1899, its purpose being to improve labor conditions, abolish child labor, to secure equal pay for equal work, regardless of sex, and generally to promote the welfare of the wage earner. In practice it has almost wholly concentrated its efforts upon the encouragement of the use of goods bearing a union label. It has probably had considerable influence in arousing interest in the label and creating a demand for union-made goods, but its direct effect on the organization of women has not been marked.

Women's unions in separate trades.

Turning to unionism in the separate trades, the men's garment makers showed the largest number of women organized in 1908, women to the number of 17,212 being found in 133 unions, forming 40 per cent of the total union membership. The most interesting organization of women in this trade took place in Chicago, where the disruption of the Knights of Labor was followed by a period of almost complete disorganization. Work was largely given out to be done at home and wages were forced down to the lowest point, the workers, mainly foreigners of half a dozen different races, presenting no combined defense.

About 1898 Scandinavian workers, mainly Swedes, came into the trade, and at the same time the so-called special-order trade became important. This consisted of taking orders for suits for individual customers to be delivered at a specified time. This necessity for having work finished at a given time gave the workers an opportunity which the Swedish women were quick to seize. By the fall of 1899 three locals had been organized, a label had been adopted, and the workers obtained a closed-shop contract which went into effect March 1 of the following year. The women were in a large

[1] Vol. X, History of Women in Trade Unions, p. 234.

majority in these locals, and soon came to have the control and main guidance of the movement.

By 1900 these unions had a membership of over 3,000; hours had been reduced to 9, wages increased, employment of children under 16 forbidden, and general working conditions greatly improved. Unfortunately, a rivalry arose between the United Garment Makers and the Swedish unions. The former were willing to accept conditions of work which the latter were determined to abolish. The manufacturers played one organization against the other, and a general struggle was precipitated, the upshot of which was the destruction of the Swedish unions and the reduction of unionism to a negligible factor among the female garment workers of Chicago.

Women engaged in the laundry trade have organized very successfully along the Pacific coast, securing moderate hours, extra payment for overtime, an increase of wages and improved working conditions. Elsewhere they have been less successful. In Troy the union was broken up completely in 1906, after a strike lasting nine months and conducted on the part of the women with almost unparalleled energy and determination.

In all the different trades followed by women the history during this period has been much the same, activity followed by a period of decline, which apparently reached its culmination at about the time at which this study ends, 1908. The period of depression with which the study closes was not looked upon as abnormal nor discouraging.

The conclusion of the whole matter seems to be that the causes for the diminution of the membership of women in unions are only such as should be expected in the early years of such a movement. Any study of general trade-unionism will show that men's unions have all gone through periods of weak beginnings, of mushroom growth, then of strong opposition from employers, resulting in the breaking up of unions or in very markedly diminishing their membership, and then finally periods of steady, persistent growth. Such is the course of trade-unionism, and women's unions are simply conforming to this law.[1]

CONCLUSION.

The conclusions drawn in the report itself as to the whole question of women in trade-unions are as follows:

Women's unions, until the last generation at least, have been ephemeral in character. They have usually been organized in time of strikes, and frequently they have disappeared upon the settlement of the industrial disputes which called them into being.

The women's unions, moreover, to a much greater degree than those of the men, have been developed and influenced by leadership from without the ranks of the wage earners. This external leader-

[1] Vol. X, History of Women in Trade Unions, p. 151.

ship has often furnished elements of weakness to the pure trade-union movement among women, but it has also furnished necessary support as unselfish and inspiring as can be found anywhere in the annals of the development of our industrial or political democracy.

External leadership has often been necessary in furnishing initial direction and financial support. It has frequently induced and sustained the movement until a growing sense of independence and an understanding of personal rights enabled the women wage earners to act together on their own account. On the other hand, external leadership has often worked injury to the trade-union women by drawing them away from plans for immediate advantages, to the consideration of more remote and less tangible schemes for universal reform.

To the organizer of women into trade-unions are furnished all of the common obstacles familiar to the organizer of male wage earners, including shortsighted individual self-interest, ignorance, poverty, indifference, and lack of cooperative training. But to the organizer of women is added another and most disconcerting problem. When men marry they usually become more definitely attached to the trade and to the community and to their labor union. Women as a rule drop out of the trade and out of the union when marriage takes them out of the struggle for economic independence.

In spite of peculiar obstacles, however, women in trade-unions have succeeded in resisting unfavorable conditions. They have by trade-union methods won occasional strikes for a shorter workday. Wages have been maintained or even raised at times. The conditions of work have been improved. But in the history of working women's organizations through the 65 years preceding the American Federation of Labor, the greatest success in securing permanent improvement has apparently not come through the agency of the strike, necessary as that weapon may be at times to compel the attention of indifferent or selfish employers. The greatest result shown by the history of the trade-union movement among women, so far as discovered in this investigation, has been in the direction of a united stand for protective legislation. In this campaign for protective legislation the trade-unions of women have been most effective agencies for educating and organizing the working women.[1]

[1] Vol. X, History of Women in Trade Unions, pp. 17, 18.

CHAPTER XI.—EMPLOYMENT OF WOMEN IN THE METAL TRADES.

SCOPE OF INVESTIGATION.

This study, which constitutes volume XI of the Report on Condition of Woman and Child Wage Earners in the United States, gives the results of an inquiry covering 246 establishments, located in 13 States and employing 85,225 wage earners, of whom 23,542 were females aged 16 or over, and 2,644 were children under 16 years old. The States in which the investigation was carried on were Massachusetts, Rhode Island, Connecticut, New York, Pennsylvania, Maryland, Ohio, Illinois, Indiana, Michigan, Minnesota, Iowa, and Missouri. The industries included, the number of establishments visited in each industry, the number of employees, and their age and sex distribution were as follows:

ESTABLISHMENTS INVESTIGATED AND NUMBER AND PER CENT OF EMPLOYEES IN EACH SEX AND AGE GROUP, BY INDUSTRIES.

Industry.	Number of establishments	Number of employees.							Per cent of employees.					
		16 years and over.			Under 16 years.			Total employees.	16 years and over.			Under 16 years.		
		Male.	Female.	Total.	Male.	Female.	Total.		Male.	Female.	Total.	Male.	Female.	Total.
Bolts, screws, etc	13	4,335	1,457	5,792	348	84	432	6,224	69.65	23.41	93.06	5.61	1.33	6.94
Bonnet wire	1	4	30	34	....	....	....	34	11.76	88.24	100.00	....	....	....
Bottle caps, etc	3	298	204	502	....	2	2	504	59.13	40.47	99.60	....	.40	.40
Brass wire	23	11,808	3,033	14,839	124	72	196	15,035	78.53	20.44	98.97	.84	.49	1.33
Corset steels	3	266	1,190	1,532	2	49	51	1,583	19.48	77.85	97.59	.11	2.80	2.71
Cutlery	2	439	50	489	2	....	2	482	89.21	10.58	99.59	.41	....	.41
Electric lamps	1	93	587	680	....	....	....	680	13.67	86.33	100.00	....	....	....
Enamel ware	3	303	63	366	....	1	1	367	82.56	17.17	99.73	....	.27	.27
Firearms, etc	2	4,804	2,428	7,382	5	60	65	7,447	66.52	32.60	99.12	.07	.81	.88
Frenchries	2	2,693	200	2,893	14	12	26	2,919	91.94	7.16	99.10	.48	.42	.90
Hardware	13	10,798	2,185	12,983	248	69	317	13,292	81.59	16.39	97.86	1.87	.67	2.54
Jewelry	40	3,102	1,725	4,827	49	64	113	4,940	62.80	35.04	97.76	1.00	1.29	2.29
Lanterns	1	234	40	274	....	....	....	274	85.40	14.60	100.00	....	....	....
Metal buttons	5	114	212	326	4	3	7	333	34.24	63.66	97.90	1.20	.90	2.10
Metal novelties	9	615	378	993	18	1	19	1,012	60.77	37.35	98.12	1.78	.10	1.88
Metal specialties	9	1,093	393	1,451	22	26	48	1,499	72.78	24.01	96.79	1.48	1.73	3.21
Saws and files	2	2,550	225	2,873	325	43	368	3,243	81.71	6.94	88.65	10.02	1.33	11.35
Silverware	2	236	106	342	2	2	4	346	68.21	30.63	98.84	.58	.58	1.16
Telephones	3	3,649	2,658	6,266	3	2	5	6,303	57.75	42.17	99.92	.05	.03	.08
Tin cans	43	7,969	2,708	10,677	428	111	540	11,217	71.04	24.14	95.18	3.82	1.00	4.82
Tin plate	2	595	44	639	15	....	15	654	90.98	6.73	97.71	2.29	....	2.29
Tinware	4	236	58	294	3	....	3	297	79.46	19.53	98.99	1.01	....	1.01
Type	1	365	75	440	....	3	3	443	82.40	16.93	99.33	....	.67	.67
Wire cloth	2	593	73	666	61	9	70	736	80.62	9.89	90.51	8.27	1.22	9.49
Paper boxes	53	1,716	3,147	4,863	32	285	317	5,200	33.00	60.52	93.52	1.00	5.48	6.48
Miscellaneous	2	31	51	82	....	....	....	82	50.00	50.00	100.00	....	....	....
Total	246	59,039	23,542	82,581	1,727	917	2,644	85,225	69.27	27.62	96.89	2.03	1.08	3.11

It is worth noticing that in these industries, none of which belong to the traditional field of women's activities, females formed more than one-quarter of the total working force, while in individual industries their proportion was frequently much higher. In some cases the numbers studied were too small to be significant, but in the 12 metal-working industries, each of which furnished 1,000 or more employees to the total group studied, the proportion of female employees ranged from 7.58 per cent in foundries to 80.45 per cent in the manufacture of corset steels. In only three of these more numerously represented industries did the proportion of female workers fall below one-fifth; in seven it rose above one-fourth; and in five, above one-third.

Children under 16 formed a relatively unimportant proportion of the working force, constituting only 3.11 per cent of the 85,225 employees included. In the 12 metal-working industries above referred to their proportion ranged from 0.08 per cent in the manufacture of telephones to 11.35 per cent in the manufacture of saws and files. In 3 of these industries their proportion fell below 1 per cent, in 9 below 3 per cent, and in 10 below 5 per cent.

The results of the investigation fall into three sections: First, a summary of the laws in force at that time affecting the employment of women and children in metal-working trades in the States covered. Second, a brief description of the work performed by women and children in these industries and of the factory conditions in which their work was carried on. Third, a discussion of the sources of danger to the worker, and the nature, frequency, and probable cause of accidents, especially to women, in the industries studied.

WORKING CONDITIONS FOR WOMEN AND CHILDREN.

FIRE ESCAPES.

The laws concerning the employment of women and children are undergoing such continuous revision that any summary of them soon becomes inaccurate, but conditions discussed in the other two sections change more slowly. Of the general factory conditions one of the most serious was the peril from fire. The buildings varied from 1 to 12 stories in height, the average being 2.39 stories. In 13 cases buildings three or more stories in height were wholly unprovided with fire escapes.

In all of these the fire hazard from the character of the buildings was considerable and in some unusual. * * * In one State escapes are not regarded as necessary upon a 3-story building.[1]

[1] Vol. XI, Women in the Metal Trades, p. 22.

More serious than the occasional lack of fire escapes was the very general failure to adapt the fire escapes provided to the number who would naturally use them in case of fire, and to so arrange both the escapes and their approaches that dangerous crowding would be avoided.

The fact seems to be that many if not most escapes have been designed to fit a law, when they should have been adapted to a condition. Calculations indicate that very frequently the numbers whom a given fire escape would naturally serve could not possibly pass down in a reasonable time, and further that if all of those who would naturally seek that escape were to crowd upon it, the strength of the structure would probably not be equal to the strain. * * * There may be records of actual tests of the capacity of fire escapes in given situations, but inquiry fails to reveal them. Grave question also exists regarding the appropriateness of the design most frequently used. In even a mild panic it is entirely possible that these escapes would prove traps rather than means of safety.[1]

LIGHT, VENTILATION, AND SANITARY CONDITIONS.

Light and ventilation were frequently unsatisfactory, about 30 per cent of the establishments visited being insufficiently lighted, and almost the same proportion falling below the cubic air space per worker usually required as a minimum in laws dealing with this point. In both these respects, new buildings almost invariably showed an improvement over the older shops and factories.

General sanitary conditions in many cases left much to be desired, but differed materially from factory to factory. Provision for the health and comfort of the women and children beyond the minimum requirements of the law was not common. Approximately one establishment in four provided dressing rooms for female employees, while about one in three provided wash rooms for them. Eight establishments provided lunch rooms in which the noon meal could be taken; the rest made no provision of any kind for this purpose.

HOURS.

The hours of labor varied, being affected partly by the character of the work done, partly by custom, and partly by legal restrictions. About one-sixth of the total employees worked a 60-hour week, but the proportion working these hours differed considerably between the sexes and between children and adults. Of the children, 31.68 per cent worked 60 hours a week as compared with 19.54 per cent of the males aged 16 and over and 11.48 per cent of the females aged 16 and over. In other words, while the number of children

[1] Vol. XI, Women in the Metal Trades, p. 22.

is small, the proportion working a 60-hour week is nearly three times as large as among the women and over 60 per cent more than among the men.

KIND OF WORK DONE.

The work done by women and children depended largely, of course, upon the particular industry in which they were employed. As a rule those under 16 were not found in dangerous or unhealthful occupations. A few boys under 16 were found in the casting rooms of brass foundries, where the dense clouds of deflagrated zinc rising from the molten metal whenever a pouring occurred constituted a serious occupational risk. A few other boys were found working in brass-polishing rooms under very unhealthful conditions, but such cases were exceptional. Women were rarely employed at tasks making serious demands upon their strength. The openers in tin-plate factories, who pulled apart the sheets of metal after rolling, were the only ones noted as having specially heavy work.

To a large extent the women fed and tended automatic machines, or operated various kinds of presses. In a few cases they buffed or polished brass ware, they polished firearms, prepared articles for varnishing, lacquering, japanning, and plating, dipped enameled ware, soldered metal parts together, made sand cores for castings, wove wire cloth, assembled or put together the parts of finished articles, inspected work of all kinds for defects, sorted, counted, and packed finished articles, and engaged in a multitude of similar accessory operations. Their employment in polishing and grinding operations, which are considered especially unhealthful, was rare, but they were frequently found at work in the japanning and lacquering rooms, where, unless good exhaust systems were installed, the fumes from the materials used were annoying and possibly harmful.

ACCIDENTS.

The danger of accident was chiefly from machinery. In general prime movers were either safeguarded or so placed that but few approached them, and elevators were tended almost exclusively by adult males, so that neither of these seemed responsible for many accidents to women and children. Shafts and belts presented a variety of dangers. Shafts were sometimes too low for safety and more frequently were studded with projecting screw heads, which were a serious menace to the safety of passing workers, while belts were found unguarded or unshipped from their pulleys and left dangling from the moving shafts, or so carelessly inspected that there was risk of their breaking with serious consequences to those around,

or employees were expected to shift and adjust them while the shaft was in motion. The greatest danger, though, came from the operation of machines, and of these the various presses were the most dangerous of those on which women and children were employed.

The study of accidents was hampered by the failure of many establishments to keep accurate records. For a group of 60 establishments, however, employing 40,719 wage earners in 13 industries, data as to accidents were secured. Only two of these showed any accidents to workers under 16, the comparative immunity of these workers being explained by a general tendency not to employ them on dangerous machines.

In the very few cases in which this precaution was not observed their accident rate rose to striking figures. Thus, all the accidents to boys under 16 in the brass shops studied occurred in one factory, the only one in which they were to any extent employed on stamping presses, punch presses, and the like. In that particular factory their accident rate was 16.7 per 100 employed.[1]

Among adults the manufacture of tin cans showed the highest accident rate, 10.82 per 100 employed, followed closely by hardware, and then by brass ware and lanterns. The lowest rate was found in the manufacture of bolts and screws, where among 1,351 employees the accident rate was only 0.59 per cent.

UNNECESSARY HAZARDS.

The wide difference between accident rates in factories within the same industries suggests that as yet it is not possible to decide upon the relative necessary hazards of different industries. When in the factories of a single industry the accident rate ranges from 2.91 to 20.24 per 100 adult employees it is evident that the average rate for the industry represents many unnecessary accidents, and that the difference between two industries may be explained on other grounds than that of their real hazards. Care in equipping and managing factories reduced the accident rate to an impressive degree.

The most striking contrast was found between two firms engaged in the manufacture of hardware and producing essentially the same class of goods. One firm occupied a rather old building in which, owing to the low studding of some of the stories, shafting ran much too near the workers. In such matters as projections upon revolving parts, unprotected belts, and stamping presses operated without safeguards, the records of inspection showed many things capable of improvement. This establishment, employing 1,006 men, had among them an accident rate of 17.49 per cent, while among the 138 women employed the rate was almost identical—17.39 per cent. The other establishment had on the whole much better buildings and much more care had been taken in guarding against the dangers

[1] Vol. XI, Women in the Metal Trades, p. 74.

suggested above. Here among its 2,488 male employees the accident rate was 3.22 per cent, while among its 500 women the rate sank to 1.40 per cent.[1]

UNDERLYING CAUSE OF ACCIDENT.

A detailed study of accidents in 16 large establishments engaged in the manufacture of bolts and screws, brass ware, enameled ware, firearms and ammunition, hardware, and tin cans showed that children formed only a small percentage of the employees and had a much smaller accident rate than the adults; that the accident rate of the women, who formed about one-fifth of the total employees, was on the whole smaller than that of the men, and that in establishments where the women's rate was higher the difference was usually trivial. This lower rate among the women is probably explained by the fact that men are usually engaged in the more hazardous occupations.

A study of 571 accidents for which full data were secured shows that nearly nine-tenths were caused by machines, the rest being due to such casualties as slipping on the floor, being struck by flying splinters, stepping on nails, etc. More than three-fourths were received in the ordinary course of machine operation. The following table of the underlying causes of these accidents is of interest:

UNDERLYING CAUSE OF ACCIDENT.

	Number.
Careless manipulation	174
Taking risks	56
Inattention to surroundings	6
Unforeseen liability	75
Imperfect mechanism	26
Unclassed	234
Total	571

The point of special interest about this table is the relatively minor part it assigns to the operatives' carelessness as a cause of injury. The records of these accidents were kept by the employers, and each case was discussed with foreman or manager and a decision as to the underlying cause was reached with the help of his knowledge of the circumstances of that particular accident. Naturally, if foremen and managers had any bias at all in the matter it would be in the direction of emphasizing, not of minimizing, the carelessness of the operatives. Yet in this group of nearly 600 accidents 17.7 per cent were due to causes over which the worker had absolutely no control, 41.3 per cent might be assigned to carelessness on his own part or on that of a fellow worker, and in almost exactly the same proportion of cases—41 per cent—it was impossible to assign the responsibility.

[1] Vol. XI, Women in the Metal Trades, pp. 74, 75.

In other words, in only about two-fifths of the cases studied could the strictest examination show that the accidents could properly be charged against the operatives.

ACCIDENTS IN CONNECTION WITH PRESSWORK.

Considerably over one-half of these accidents occurred on presses of various kinds. From the standpoint of accidents, presses are of importance not only as being notoriously dangerous but as being operated to a large extent by women and minors. In view of these facts a special study was made of the accidents occurring in a group of 1,143 press hands—595 males and 548 females. They were employed in 18 different factories, and the accident records had been kept for periods varying from two to six years. In this study several facts became clearly apparent:

COMPARATIVE DANGER OF PRESSWORK.

First, the accident rate for press hands was enormously greater than that for operatives in general. Their rates as compared with those of other operatives in the same 18 factories were as follows:

ACCIDENT RATES AMONG PRESS HANDS AND OTHER OPERATIVES, BY SEX.

	Accidents per 100 employees.		
	Male.	Female.	Total.
Press hands	41.30	54.94	48.01
Other operatives	14.19	5.58	11.75

Ordinarily, even when working side by side, the two sexes are engaged in different occupations involving different degrees of danger, so that their accident rates can not fairly be compared. In the press hands, however, we have a group of men and women working in the same occupation and subjected to the same dangers. Conditions are not in every case identical for the two sexes, for stamping presses are not all alike and the more dangerous ones are operated sometimes by women, sometimes by men. The situation * * * is, however, equalized between the sexes by the varying practice of different shops, both in regard to the relative number of men and women employed and the sort of machines they operate, so that their accident rates reflect their relative hazards.

Comparing then the accident rates * * * for the two sexes, it appears that under practically identical conditions the rate for women is higher in 11 of the 18 establishments studied; that the excess in their rate appears alike in factories where they are relatively few and relatively numerous; that in some cases * * * this excess is enormous; and that for the whole group the accident liability of the women exceeds that of the men by almost one-third

(33 per cent). The evidence seems reasonably conclusive that among press hands at least women run a much greater risk of injury than men.[1]

Another question presents itself, however. Do the women in general meet with as serious accidents as the men, or is their rate brought up by a possible tendency on their part to report trivial injuries which a man would pass over in silence? A study of the accidents according to sex and nature of injury makes it clear that the excess in the women's accident rate is not due solely to casualties in which the injury received may be slight, but that the excess appears very general throughout the various classes of accidents.

VARIATIONS BETWEEN FACTORIES.

Second, the accident rate varied almost incredibly from factory to factory. In this group of 18 establishments the rate ranged from 6.48 per cent in establishment No. 17 to 114.01 per cent in establishment No. 6. Several explanations were offered for these variations, such as the use of guards, the character of the working force, etc., but the most important seemed to be a difference of custom in regard to recording minor accidents. Thus the plant recording an accident rate of 114.01 per cent was one of the best equipped and most carefully managed factories studied. But the management had provided an emergency room with a nurse in attendance, and the workers went there to have cuts and scratches bandaged, which they would never have thought of reporting as accidents; consequently the accident record was very much fuller than it could possibly have been in a factory not so equipped.

SPECIAL HAZARD TO WOMEN.

Third, in this occupation, in which men and women worked under much the same conditions as to danger, the accident rate is nearly one-third greater among the women than among the men—54.94 per cent for women to 41.30 per cent among the men.

In order to discover, if possible, the reasons for this excess of hazard to female workers, these accidents were studied from various aspects. Nearly three-fourths (74.09 per cent) had occurred in the ordinary use of the machine, 10.28 per cent had resulted from a disregard of orders, while the remainder had been caused by a variety of unforeseen happenings. A study of the underlying causes showed that in only 13.64 per cent was it possible to attribute the accident to any fault or carelessness of the worker, while in 75.77 per cent it was impossible to decide upon the underlying cause.

When the evidence concerning causes is tested by the requirements of scientific accuracy, it becomes apparent that carelessness is as-

[1] Vol. XI, Women in the Metal Trades, p. 85.

signed as a cause in a large number of cases in which it can not fairly be held accountable. It is assumed when, upon careful questioning, even those who make the assumption admit that it does not apply. In literally hundreds of the cases included in the above table "carelessness" was the unhesitating explanation of the accident, although even the most elementary study of the circumstances showed that it was but one of many factors, any one of which might with equal propriety have been assigned as the chief cause.[1]

UNFAMILIARITY WITH MACHINE AS CAUSE OF DANGER.

The most significant fact brought out concerning these accidents relates to the length of time the injured worker had been employed upon the kind of machine at which the accident occurred. For the 1,102 press hands, for whom this was learned, the facts were as follows:

NUMBER OF PRESS HANDS INJURED, ACCORDING TO TIME SINCE BEGINNING WORK ON THE MACHINE, BY SEX.

Time of accident with reference to time on machine.	Press hands.		
	Male.	Female.	Total.
During first day	77	222	299
Second day to end of first week	95	161	256
Second week to end of first month	61	81	142
Second month to end of sixth month	101	92	193
Seventh month to end of first year	33	40	73
After first year	72	65	137
Total	439	663	1,102

It must be premised that there was no indication that those who had been injured during the first few days on the machine had given it up and taken other work on recovery, thereby unduly increasing the number of beginners. More than 80 per cent of the injured were known to have returned to the same work. Bearing this in mind, the figures seem to justify the conclusion that unfamiliarity with the machine has much to do with accidents. Of the 965 accidents which occurred within a year after the injured operative began work upon the machine, a full third—34.1 per cent—happened during the first day, and not far from three-fifths—57.7 per cent—occurred during the first week. But if lack of familiarity with the machine is a cause of accidents, then it might reasonably be expected that women, who are less familiar with tools and machinery in general than men are, would be more affected by this cause than the male workers. The table shows that this is the case to a very marked degree. For men 22.8 per cent of the year's accidents occurred

[1] Vol. XI, Women in the Metal Trades, p. 88.

within the first day and 42.1 per cent within the first week, while for females the corresponding percentages were 40.1 and 66.1. In other words, the first week's work on the machine accounted for practically two-thirds of the year's accidents among the female workers, the remaining 51 weeks showing only 33.9 per cent, while among the male workers these 51 weeks of greater familiarity furnished 57.9 per cent of the year's accidents. The figures are not conclusive, but they seem to indicate that when men and women work under the same conditions a considerable portion of the woman's extra hazard is due to her lack of familiarity with machinery.

In addition to the study of accidents the report contains two general discussions, one on the distribution of accidents through the hours of the day, and one on the weight which should be assigned to carelessness as a cause of accidents.

DISTRIBUTION OF ACCIDENTS THROUGH WORKING HOURS.

The first is an attempt to see whether any connection can be traced between fatigue and accident. For this purpose a table has been prepared showing the hour of each accident recorded by 19 metal manufacturing establishments, 126 cotton mills whose records covered one year and one whose record extended over eight years, the unpublished records of the Indiana department of factory inspection for three years, and the published tabulation of the Wisconsin bureau of labor.

DISTRIBUTION OF INDUSTRIAL ACCIDENTS THROUGH THE HOURS OF THE DAY.[1]

Hours.	Metal-working establishments.									
	Accidents to press hands.				Accidents to other workers.				Total accidents.	
	Male.	Female.	Total.	Per cent.	Male.	Female.	Total.	Per cent.	Number.	Per cent.
6 to 7 a. m.										
7.01 to 8 a. m.	48	79	127	6.91	322	37	359	8.18	486	7.81
8.01 to 9 a. m.	95	100	195	10.61	429	53	482	10.98	677	10.87
9.01 to 10 a. m.	105	128	233	12.68	562	65	627	14.29	860	13.81
10.01 to 11 a. m.	96	115	211	11.48	480	72	552	12.58	763	12.25
11.01 a. m. to 12 m.	66	79	145	7.89	303	43	346	7.89	491	7.89
12.01 to 1 p. m.	38	52	90	4.89	132	19	151	3.44	241	3.87
1.01 to 2 p. m.	83	92	175	9.52	372	55	427	9.73	602	9.67
2.01 to 3 p. m.	102	103	205	11.15	416	55	471	10.73	676	10.86
3.01 to 4 p. m.	98	124	222	12.08	435	59	494	11.26	716	11.50
4.01 to 5 p. m.	76	89	165	8.98	300	46	346	7.89	511	8.21
5.01 to 6 p. m.	34	36	70	3.81	118	15	133	3.03	203	3.26
6.01 to 7 p. m.										
7.01 to 8 p. m.										
Total	841	997	1,838	100.00	3,869	519	4,388	100.00	6,226	100.00

[1] In the Twelfth Annual Report of the Minnesota Bureau of Labor, p. 137 et seq., appears a tabulation and charting of over 10,000 accidents, by hours. These are not so arranged as to be exactly comparable with this table, but show a similar distribution.

DISTRIBUTION OF INDUSTRIAL ACCIDENTS THROUGH THE HOURS OF THE DAY—Concluded.

Hours.	Cotton mills.[1]				General manufacture.				Grand total.	
	126 mills, 1 year.		1 mill, 8 years.		Indiana, 3 years.		Wisconsin.			
	Number of accidents.	Per cent.	Number of accidents.	Per cent.	Number of accidents.	Per cent.	Number of accidents.	Per cent.	Number of accidents.	Per cent.
6 to 7 a. m.	73	6.19	63	8.22	.....	.....	.....	.....	136	0.91
7.01 to 8 a. m.	95	8.06	66	8.86	846	11.31	76	4.02	1,271	8.51
8.01 to 9 a. m.	126	10.66	82	10.71	492	10.19	126	6.67	1,508	10.09
9.01 to 10 a. m.	161	13.64	90	11.75	603	12.49	227	12.01	1,941	13.04
10.01 to 11 a. m.	128	10.85	114	14.88	469	9.71	245	12.96	1,719	11.54
11.01 a. m. to 12 m.	78	6.61	43	5.61	338	7.00	208	11.00	1,158	7.78
12.01 to 1 p. m.	58	4.92	9	1.18	183	3.79	49	2.59	540	3.63
1.01 to 2 p. m.	78	6.61	63	8.22	441	9.13	126	6.67	1,310	8.80
2.01 to 3 p. m.	98	8.30	67	8.75	481	9.97	213	11.27	1,535	10.31
3.01 to 4 p. m.	126	10.68	77	10.05	598	12.38	240	12.70	1,757	11.80
4.01 to 5 p. m.	90	7.63	57	7.44	489	9.95	229	12.12	1,367	9.18
5.01 to 6 p. m.	59	5.00	33	4.31	197	4.08	151	7.99	643	4.32
6.01 to 7 p. m.	7	.59	.....	.....	.....	.....	.....	.....	7	.05
7.01 to 8 p. m.	3	.25	.....	.....	.....	.....	.....	.....	3	.02
Total	1,180	100.00	766	100.00	4,828	100.00	1,890	100.00	14,880	100.00

[1] See Vol. I, Cotton Textile Industry, p. 396.

This table shows that accidents do not increase in regular progression throughout the working hours, reaching a climax as the end of the day approaches. Instead the hours from 7 a. m. to 12 noon and from 1 to 5 in the afternoon[1] constitute two distinct but similar periods. In each the hourly number of accidents increases up to about the middle of the period and then falls off steadily until the end of the period. A second feature of interest is that the proportion of accidents is very generally greater in the morning than in the afternoon. The figures do not prove that there is no connection between fatigue and accident, but they indicate that the relation, if it exists, is by no means on the surface, and they strongly emphasize the need of further investigation of this point.

CARELESSNESS AS A CAUSE OF ACCIDENTS.

The discussion of carelessness as a factor in the causation of accidents here follows, almost in full:

In the reports of industrial accidents, which in certain States are required by law, nothing is more striking than the frequency with which "carelessness" appears under the heading "Cause of accident." There is a general and deeply rooted impression that by the exercise of due care the worker can avoid the larger part of the dangers to which he is exposed, and that in consequence if he is in-

[1] The hour between 12 and 1 is so generally broken by a lunch period that it can not be looked upon as typical, and the hour from 5 to 6 in the afternoon is affected by the fact that many of the establishments considered closed before 6.

jured it is very apt to be his own fault. In view of this, it is worth while to examine closely some of the causes usually classed as carelessness, in order to see how far the worker is really responsible for them.

A power-machine worker must, for the sake both of safety and efficiency, become automatic. Only with freedom from the strain of performing each act by a conscious exercise of will come skill and comparative safety. The faltering learner is in constant danger. Not only are his movements apt to be awkward and imperfectly coordinated, but the very intensity of his care is in itself a source of danger. Strained attention leads to action by anticipation. A common laboratory experiment illustrates what is meant by such action. The subject of experiment may be required to do some act—press an electric key, for example, upon the appearance of a prescribed signal. Intent upon executing the movement promptly upon the appearance of the signal, some entirely different nervous stimulus may set off the nervous system and the key be pressed. This stimulus may be an unexpected noise, or any other occurrence which applies a spark to the train of nervous activities.

An athlete crouching, tense, at the starting line may be sent from his mark by a sudden gust of wind. In such a case the starter must, for purposes of discipline, act on the assumption that the act was voluntary. In the great majority of cases it is not voluntary in the smallest degree. A tense nervous system is always liable to be set into action by some other than the regular stimulus.

This fact applies very directly to the learner upon a machine. Many things conspire to create for him a condition of tension. Knowledge that the machine is dangerous, anxiety to show ability equal to the task, and many other causes act upon the beginner, who is quite likely, as our industry is organized, to be youthful.

The acts of the operator must come in proper relation with those of the machine. The beginner, unskillful yet, waits tensely the position of the machine which signals the making of his contribution to the process. At such an instant there intrudes some other stimulus, it matters not what. He anticipates his movement. Mangled fingers, a lost hand, or greater mutilation may result.

This would certainly be attributed by any foreman in any factory to the "carelessness" of the victim. But is it so? A normally organized nervous system has done what it must under the circumstances and disaster results.

It should not for a moment be forgotten that this sort of action of the nervous system is a foundation of its usefulness. A system incapable of such behavior would also be incapable of executing those amazing protective actions by which life itself is preserved. The operator is as powerless to prevent such action as he is to prevent the machine from going its appointed round. As practice continues, the tension gradually subsides and the worker attends less closely but is vastly more safe. The operator may look at other objects, may speak with a companion, or do other things which indicate that attention is no longer concentrated to so painful a degree upon the work. At the same time, the rhythmic movement of the hands keeps up and the output of the machine continues. This condition is often described as one of "carelessness." The term is altogether misleading in this connection, since it implies that the worker is taking a risk

in a blameworthy fashion. In becoming thus, in a measure, detached from the work the worker does the only thing which can relieve the relatively great danger which assails the beginner. He has reached a condition of automatism which, except under conditions specified later, is greatly safer than his earlier situation, when, as a learner, he was attending with exactness to each item of the process.

This release of the worker from the beginner's slavery to minute detail is important from the standpoint of his safety and even more from that of his nervous health. The routine of attending a machine involves strain enough at the best. If the degree of attention necessary at the outset continued through any extended period, the strain would be destructive. This is the more true the higher the original quality of the nervous system concerned. For a normally constituted person such a continued strain would be impossible without grave damage.

The trained and hence automatic worker is not wholly free from accident. What of the factor of carelessness in his case? As suggested above, there is nearly always an implication that the operator might, by greater care, escape many, if not all, of the dangers which beset his occupation. A thoughtful consideration of the preceding discussion must lead to the conclusion that for the beginner, at all events, this is far from true. Further, we must agree that escape from the beginner's danger lies along the road to a condition which many observers of workpeople would call "carelessness." The very attitude which is charged with causing accident is seen on closer analysis to be an effective means of safety.

In the case of the trained worker, danger intrudes at two points, at neither of which can he be said to sustain a responsible position toward the result. A very large number of mechanical processes involve a series of operations, one following another. For example, in the operation of a stamping press, the adjustment by the fingers of the object to be formed is followed by a movement of the foot upon a releasing treadle. At first these successive actions are a result of attention on the part of the operator to each item of the process. There is complete demonstration that this period is one of the greatest danger.

Gradually the two motions assume a relation of direct cause and effect with no intervening volition. One follows the other with the same certainty that the fall of a stone follows the removal of the support. Suppose the worker has reached this stage of his development. Some roughness on the work, some failure of the machine to do its part exactly may delay or disturb the first motion. It is evident that the first motion being interfered with, the execution of the second may, probably will, give rise to danger. Having started the action, can the worker, when the first motion goes wrong, refrain from the second? So far as his will entered into the matter, it was in the form of a command for the whole action, comprising the successive motions. It may even be doubted whether the will enters so much as that, but it is certain that once started the successive motions are beyond his control. The first starts the second. The worker is helpless.

Another disturbance of the usual progress of events may occur through the special senses. Suppose that the worker has started his

series of movements. These, as we have noticed, must go on through their regular sequence. After the series starts he sees something amiss with work or machine. This may, usually will, start an entirely new series of actions, but does not stop the one already started. Here again comes in the inevitable movement of a nervous machine. In an entirely involuntary way he reaches to readjust the disordered work. It is almost certain that the two series of actions will cross each other. He will press the treadle and at the same moment put his hand under the die.

This will appear as carelessness, but it can not fairly be so considered. Both machines, the human and the nonhuman, did what they must. A concrete case may help to make the situation clear. In the manufacture of cartridges several operations are performed by drawing presses. These are usually fed by means of a horizontal revolving disk upon which the operator places the cartridge shells. The rotation of the disk carries them through a gradually narrowing lane, formed by metal strips, to the action point. Very strict orders were given in one factory to stop the machine if any of the shells toppled over or went wrong in any way. Nevertheless it was repeatedly found that good and experienced operators, acting upon the spur of the comparatively rare occurrence of improper action, would reach to adjust a toppling shell, become entangled, and be badly hurt. Finally, the superintendent arranged a screen with a little swinging door through which the shells passed on their way to the drawing dies. This made it necessary, if anything happened needing adjustment, to stop the machine in order to attend to it. This illustration is cited not only as an example of the automatic, practically involuntary, action to which so many accidents are due, but also as showing the qualities which should characterize a safeguard. It should effectually prevent or estop these instinctive efforts of the aroused worker which are liable to lead to accident. * * *

What has been said above is enough to show that for the sake of lessening the nervous strain and for the avoidance of specific accidents no extreme of thoroughness in safeguarding is beyond reason. It is clearly evident that the problem is not one involving an irresponsible agent, the machine, and a responsible one, the worker, but that in many cases the worker is hardly more responsible than the machine. When the spontaneous and necessary activities of a nervous system are brought into relation with the inevitable movements of machines, the possibilities can not be otherwise than serious.

A machine so constructed that at intervals its own parts interfere with each other, causing serious breakage and loss, would be either modified or quickly discarded. Our compound machines of man and metal must be treated in the same way. It is a false assumption that the worker's intelligence and care should be expected to avoid hazards which can be removed by improved conditions.

If the worker is regarded strictly as part of the machine rather than as a man, these damaging interferences will soon be greatly lessened.[1]

[1] Vol. XI, Women in the Metal Trades, pp. 50–62.

CHAPTER XII.—EMPLOYMENT OF WOMEN IN LAUNDRIES.

Volume XII of the Report on the Condition of Woman and Child Wage Earners gives the result of an investigation covering 315 laundries in Chicago, New York, Brooklyn, and Philadelphia. The number of laundries visited in each city, the number of employees, and their sex distribution are shown in the following table:

NUMBER OF LAUNDRIES VISITED IN THE INVESTIGATION, AND NUMBER AND PER CENT OF WOMEN EMPLOYED.

City.	Laundries visited.	Total employees.	Men.	Women.	
				Number	Per cent.
Chicago	105	2,085	415	1,670	80.0
New York	82	1,903	360	1,543	81.1
Brooklyn	85	874	175	699	80.0
Philadelphia	43	1,555	325	1,230	79.1
Total	315	6,417	1,275	5,142	80.1

The report falls naturally into four parts—general working conditions in laundries, hours of work, character of work, and effect of work—all discussed in their relation to female workers only.

GENERAL WORKING CONDITIONS.

IN POWER LAUNDRIES.

The laundries visited were of two general classes: The steam or power laundries and the so-called hand or domestic laundries. The power laundries were frequently large establishments, employing several hundred women, and housed in buildings constructed with special reference to the needs of the industry. Some of these were models of what a laundry should be, the comfort and health of the employees being looked after as carefully as the facilities for swift and effective work. Such plants were exceptional, however, and down the scale from them were plants of all grades and sizes to the basement laundries with almost no sanitary conveniences and heavy, old-fashioned machinery or none at all.

It would perhaps be safe to say that a majority of the power laundries visited were in fair condition, but in each city some were found ill ventilated, ill lighted, and with sanitary accommodations ranging from poor to excessively bad. In the poorer places ventilation was apt to be exceedingly defective. In one basement laundry, for instance, conditions in this respect were indicated by the pro-

prietor's remark that he supposed he would have to put in ventilating fans and exhaust pipes because the druggist upstairs was complaining about the steam that came into his place through the floor.

IN HAND LAUNDRIES.

The so-called hand laundries were frequently carried on in the home of the proprietor. Ordinarily no washing was done in them, clothes being sent to the steam laundry to be washed and only the ironing being done by hand. These laundries were usually small, so that at least few workers were affected by conditions prevailing in them. From the standpoint of the proprietor's family, the hand laundry meant bringing the heat, confusion, and crowding of an ironing room into their limited house space, and the further necessity of giving up additional space for receiving, sorting, and giving out the clothes. From the customers' standpoint it meant that the clothes were handled and ironed, even if not washed, in the crowded and frequently insanitary living rooms of a tenement, with no assurance even that the place was free from contagious illness. These hand laundries were most numerous in New York and Brooklyn, Chicago being relatively free from them.

HOURS OF WORK.

Detailed study of the hours of work was made in nine representative Chicago laundries. A comparison of the working hours in all the laundries visited with the hours prevailing in those in which special inquiry was made showed that practically the same conditions in this respect prevailed generally. The natural conditions of laundry work tend to mass the workers' hours at some particular part of the week; the weekly hours may not be long as compared with other industries, but very generally there will be one or two long days within the week with a correspondingly short day or days to compensate. Thus the ironers frequently do not begin work until noon or later on Monday, as there are no clothes ready washed for them to iron. Toward the end of the week, however, they may find it necessary to work 12, 13, or even 14 hours to finish the clothes in time for the end of the week delivery. At that end of the week, on the other hand, the work of washing is pretty well out of the way, and those engaged in it have their short days.

The work of a laundry is not usually seasonal unless an establishment depends for patronage on a locality whose residents go away in large numbers for the summer. Nevertheless, a rush season may be occasioned any week by the advent of a large convention, the arrival of a steamer, or an unexpected hotel order. The response to such a suddenly increased demand usually takes the form of one or more long days for the employees. According to the reports of

the nine Chicago laundries included in this investigation the long day for their busy season did not exceed 12½ hours, and for the rest of the year—amounting in most cases to over 45 weeks—it did not exceed 10 hours in 1909, although the 10-hour law was not then in operation.

The daily and weekly hours during both the normal and the busy season in the nine Chicago laundries investigated were as follows:

HOURS OF LABOR OF WOMEN EMPLOYED IN STEAM LAUNDRIES DURING NORMAL PERIODS AND DURING THE RUSH SEASONS OF 1908 AND 1909, AS REPORTED BY EMPLOYERS.

Establishment No.	Number of women employed.			Normal hours of women 16 years and over.			Busy season.			
	16 years and over.	Under 16 years.	Total.	Long day.	Short day.	Total hours per week.	Duration in weeks.	Prevailing weekly hours.	Average length of long day.	Average length of short day.
1	87	2	89	10	10	60	[1] 6	65	12½	10
2	30	.....	30	10	10	60	[1] 6	70	12	10
3	134	.....	134	10	10	60	None.	.....	.....	.....
4	60	1	61	10	8½	[2] 58	[1] 6	64	11	8½
5	75	.....	75	9	9	54	25	58	11	9
6	25	.....	25	8	8	48	None.	.....	.....	.....
7	45	4	49	10	10	60	None.	.....	.....	.....
8	41	8	49	8	8	48	12	52	10	8
9	49	1	50	10	10	60	16	62	11	10
Total	556	16	572	.....	.....	.....	.....	.....	.....	.....

[1] These weeks are not consecutive. [2] On Monday, 9½ hours.

None of these laundries report a longer day than 10 hours during the normal season, and only two reported as much as 12 hours for the long day of the busy season. But of 112 women employed in these laundries from whom individual reports were secured about 37 per cent reported working longer hours than those given as normal by the managers of the laundries in which they were employed. Moreover, women not employed in such laundries at the time of the interview, but formerly at work there, reported that there were one or two days nearly every week in the year prior to the validation of the Illinois 10-hour law when the girls had to work more than 10, and sometimes as many as 14, hours a day to get out rush orders.

CHARACTER OF WORK.

The kind of work done has an important bearing upon the question of hours. In the power laundries women were engaged principally in listing, marking, sorting, hand washing, shaking, mangling, folding, starching, machine ironing, hand ironing, finishing, mending, and wrapping.

The first three occupations need no description. They do not involve heavy work, and while handling soiled clothes may be unpleasant, the consensus of opinion is that there is very little risk of contracting disease by so doing. The women stand while working at these occupations.

After being sorted the clothes are washed, usually by machinery operated by men, and next passed through an extractor, a machine so arranged that the water is driven out of the clothes by centrifugal force. This machine also is tended by men.

Hand washing, which is used only in the case of unusually fine, fancy clothing and on special orders, is usually carried on in the wash rooms by women. In most laundries not more than two or three women are required for this occupation. The work is laborious and is usually carried on under unfavorable conditions. The humidity of the wash room is high, and in addition there is frequently insufficient drainage of water from the floors, so the women employed here are liable to suffer from damp and wet clothing and from wet feet. The water used in washing is frequently treated for softening and then for bleaching effects by chemicals. Of these chemicals a physician says:

If handled in a dry state they cause intense itching and eczematous eruptions of the skin. When vaporized after solution or in gaseous form they irritate the eyes and the whole respiratory tract, occasioning conjunctivitis and giving rise to catarrhal inflammation of the throat and bronchial tubes.[1]

After coming from the extractor the clothes must be shaken out before they can go through any further process. Girls called shakers pick up the pieces one by one, snap or shake them violently, and lay them down in neat piles or fold them ready for mangling. This work is done standing and involves a steady use of the arms and more or less stooping and reaching, so that many girls acquire a constant motion of the body as well as of the arms. The muscles are under constant strain throughout the day in rooms where the temperature is high and the air full of moisture.

The work of the manglers consists simply of feeding the pieces one by one into the mangle, where they pass between various heated cylinders and come out at the other side, smooth and ready for folding. The work is not laborious, except that it must be done standing, and requires little skill. Unless the mangle is provided with safeguards there is always danger that the worker's hands may be caught between the revolving cylinders, with serious consequences. Also, unless special ventilating devices are used, the worker is apt to be exposed to a very high temperature. Folding the pieces as they come out from the mangle is usually done by young workers. It is not heavy work and the girls can sit except when folding the largest pieces.

Starching may be done entirely by hand, or partly by hand and partly by machinery. In the hand process women stand at their work with bowls of starch before them, and stretching out one piece

[1] Vol. XII, Employment of Women in Laundries, p. 25.

at a time rub the starch well into it. Thus, in addition to the standing there is a continuous strain on the muscles of the hands and arms. If starching is done in the ironing rooms, as is frequently the case, the effects of the heat and the work are especially severe during the summer months. Where machinery is used the work is much less strenuous, consisting largely in feeding articles into the machines and gathering them up as they come out on the other side. The women can sit at this work.

Dampening the clothes ready for ironing is done by women and has no objectionable features beyond the continuous standing required. The machine ironing is done on a variety of machines devised for ironing different articles, such as shirts, collars, cuffs, etc. Ironing collars, though requiring continuous standing, is not heavy work, but the machines used for ironing shirt bodies, bosoms, yokes, etc., make serious demands upon the worker's strength. The characteristic feature of these machines is that after the article has been put in place, the operator presses a lever with her foot which brings a heated surface into contact with the article to be ironed.

The ordinary process of machine ironing requires the constant use of the lever, which is operated by the same foot continually. In case certain reverse movements are necessary a second lever operated by the other foot is used. The occupation of ironing is without doubt excessively fatiguing labor. The women can not sit while doing the work. * * * In some laundries the women have wooden boxes to stand on, so that in using the foot lever they step down upon it instead of having to step up on the lever and then force it down with the weight of the body. This is decidedly easier. * * * The machines radiate an excessive heat and this combination of heat and tiresome movements of arms and body works great discomfort to the operator. In addition to the muscular strain the women must be constantly on guard to prevent getting their fingers caught between the rolls.[1]

Hand ironing, which needs no description, is heavy work and the relative number of women in this occupation is declining. In the larger laundries a considerable proportion of the hand ironers are men. Few young women engage in it, and the women now found in it are mostly survivors of the old system, who almost universally show the effects of their hard labor.

The only remaining occupations for women are assembling the articles according to the original lists, mending when necessary and wrapping them ready for delivery. Assembling and wrapping are both performed by women standing.

It will be noticed that the majority of these occupations are such that the women must stand while working, that several of them make severe demands upon the strength, that some must be carried on under trying conditions of heat, moisture, etc., and that some of the ma-

[1] Vol. XII, Employment of Women in Laundries, p. 23.

chines used have decidedly dangerous features. It seems a natural inference that the detrimental effect of these various features must increase as the working hours are lengthened, and that "long days" are especially undesirable in such an industry.

EFFECT OF WORK ON HEALTH.

The data concerning effect of laundry work upon the health of women engaged in it was secured by questioning 539 women taken without any selection from the different laundries visited. They are representative of laundry conditions so far as a mere symptomatic diagnosis of individuals by a physician without physical examination can represent health conditions. The reports are from the viewpoint of a physician, not simply reported on the woman's word unsupported by any evidence of probability.

Of the women thus examined 404 made no complaint of ill health which could be ascribed to the laundry, 6 complained of ill health which, while not due to laundry work, had been aggravated by it, and 129 complained of ill health directly attributable to their occupation. The following table shows details as to age, experience, conjugal condition, etc., of the women questioned:

EFFECT OF LAUNDRY WORK UPON HEALTH AS REPORTED BY WOMEN EMPLOYEES, WITH AGE, EXPERIENCE, CONJUGAL CONDITION, AND CHARACTER OF OCCUPATION.

	Number.	Average age.	Average years' experience in laundry.	Conjugal condition.				Character of occupation.					
				Married.		Single.		Standing.			Using foot lever.		
				Number.	Per cent.	Number.	Per cent.	Number reporting.	Number.	Per cent.	Number reporting.	Number.	Per cent.
Making complaint of ill health	129	27.5	7.2	51	39.5	78	60.5	98	97	99.0	90	32	35.6
Making no complaint of ill health, or complaint not chargeable to laundry work	404	27.0	5.7	[1] 141	35.2	260	64.8	175	162	92.6	166	47	28.3
Ill health not chargeable to laundry, but aggravated by laundry work	6	43.3	11.8	5	83.3	1	16.7	5	5	100.0	5	3	60.0
Total	539	27.3	6.1	197	36.7	339	63.3	278	264	95.0	261	82	31.4

[1] Not including 3 not reported.

The average age of the women of the first two groups is so nearly the same that it seems unlikely that age is a factor in the difference in health shown. Since the women who complained of ill health had been employed in laundries on an average a year and a half longer than those who made no complaint, it is possible that the difference in length of service explains part of the difference in health. It

seems probable, however, that the character of the occupation of the women of the two groups has most significance with reference to complaints of ill health. Of the women making complaints 99 per cent stood at their work, while of those who made no complaint 92.6 per cent stood. Unfortunately, a number of the women interviewed did not report their precise occupation in the laundry, but of those who did make such reports those complaining of ill health showed a considerably larger proportion working in occupations which involved the use of the foot lever than was found among those who made no complaints of ill health.

CLASSIFICATION OF WOMEN BY KIND OF ILL HEALTH SUFFERED.

The 129 women complaining of ill health were grouped, according to the character of their complaints, into nine classes. The following table gives the number of women in each class and certain details concerning them:

EFFECT OF LAUNDRY WORK UPON THE HEALTH, AS REPORTED BY WOMEN EMPLOYEES, CLASSIFIED BY NATURE OF COMPLAINT, AND WITH REFERENCE TO AGE, NUMBER OF YEARS' EXPERIENCE, NATURE OF OCCUPATION, AND CONJUGAL CONDITION.

Nature of complaint.	No.	Per cent of total.	Average age.	Average number of years' experience.	Conjugal condition.				Character of occupation.					
					Married.		Single.		Standing.			Using foot lever.		
					No.	Per cent.	No.	Per cent.	No. reporting.	No.	Per cent.	No. reporting.	No.	Per cent.
1. Women complaining of lameness and pains in back, legs, arms, and chest	[1] 26	20.2	23.6	5.7	5	19.2	21	80.8	22	22	100.0	21	5	24.0
2. Women complaining of general debility	9	7.0	29.9	8.3	4	44.4	5	55.6	6	5	83.0	5	2	40.0
3. Women complaining of swollen legs, ankles, and feet	[2] 34	26.4	30.2	8.5	17	50.0	17	50.0	27	27	100.0	22	5	22.7
4. Women complaining of nausea, irritation of lungs	[3] 13	10.1	25.5	7.3	3	23.0	10	77.0	11	11	100.0	11	4	36.4
5. Women complaining of abdominal pains	[4] 11	8.5	29.3	7.9	6	54.5	5	45.5	9	9	100.0	9	5	55.6
6. Women complaining of pelvic troubles and alleged displacement	[5] 28	21.7	28.3	6.5	15	53.6	13	46.4	18	18	100.0	17	8	47.0
7. Women complaining of alleged kidney trouble	4	3.1	22.5	5.7	..		4	100.0	2	2	100.0	2	....	.....
8. Accidents	3	2.3	24.0	4.7	1	33.3	2	66.7	3	3	100.0	3	..	...
9. Women complaining of ill health due to grossly insanitary conditions in laundry	1	.7	35.0	9.0	..	...	1	100.0	..	..	...	..	..	...
Total	129	100.0	...	.....	...	...	...	...	...	...	...	...	...	.....

[1] Including 4 complaining of rheumatism and 1 of headache (daily).
[2] Including 3 complaining of rheumatism, 6 of varicose veins, 1 of headache, and 2 of general poor health.
[3] Including 2 complaining of rheumatism.
[4] Including 3 complaining of rheumatism.
[5] Including 1 complaining of rheumatism and 2 of varicose veins.

CONNECTION BETWEEN ILL HEALTH AND SPECIFIC CONDITIONS OF WORK.

Some of the women made complaints of specific conditions in the laundries to which the ill health complained of might be at least partly due. Thus, of the 13 women who complained of nausea and irritation of the lungs, 12 also complained of dampness, steam, odors, or noxious gases. In all 30 women made definite complaint of these things; others did not have any definite complaint to make or simply failed to report in the matter. Considering the heat in all laundries and the steam in poorly ventilated laundries, complaints of these conditions were not so common as might be expected.

In other cases the ills complained of had an apparent connection with certain conditions in which the work was carried on, although the workers did not make the connection. Swollen feet and ankles, which were complained of more frequently in summer than in winter, were often as much the result of heat from the ironing machine as of standing. The connection between abdominal pains, pelvic troubles, alleged displacement, etc., and the use of the foot lever is not proved, but is at least indicated by the figures of the table given above. The rheumatism complained of was found mainly among the older women and might have been attributable to insanitary living conditions as well as to laundry conditions. Yet there are conditions in the laundry which may directly account for rheumatism and catarrhal conditions. Some laundries have no dressing rooms or places for putting away outer wraps. In such cases they are thrown upon a table or hung on the wall, unprotected from the steam and moisture of the atmosphere. The clothing of the women becomes damp from perspiration and from the steam from their work. When they are ready to leave the laundry at night they not only continue to wear their damp working clothing but put on the steam-dampened outer garments. These are a very inadequate protection if the weather is severe, and the women are chilled through, incurring an obvious risk of colds and rheumatic pains. Such conditions are not, however, universal.

Much has been done and more can be done to improve working conditions and thus health conditions in laundries. The best motor laundries are sanitary and provided with bathing facilities, rest rooms, and rooms where work clothes can be changed for street costume. * * * Some employers encourage the women to go to rest rooms at intervals and sit or lie down for a short time for relaxation, claiming that it pays in the day's work as a whole, for more and better work is turned out. None of the better class of laundries will employ women who are too frail for the work or who are under 18 years of age, and an effort is made to train young workers properly for the trade. No weak girls are put on machines

and no overtime is exacted. Proprietors contend that with good working conditions and no overwork there is no better trade for women.[1]

In addition to the general discussion, the report includes a series of paragraphs giving for each of the 539 women questioned such salient facts as age, race, conjugal condition, occupation when reported, home surroundings, and such facts of earlier industrial history as might have a bearing upon her present physical condition.[2]

[1] Vol. XII, Employment of Women in Laundries, p. 32.

[2] Reference should here be made to a study of the employment of women in the power laundries in Milwaukee, Bulletin No. 122 of the U. S. Bureau of Labor Statistics, which may be considered supplementary to the report summarized above. The special object of this later study was to secure careful detailed data in regard to the precise working conditions in power laundries and in regard to the physical demands of the various laundry occupations.

CHAPTER XIII.—INFANT MORTALITY AND ITS RELATION TO THE EMPLOYMENT OF MOTHERS.

Volume XIII of the Report on Condition of Woman and Child Wage Earners includes two distinct studies. The first is a study of the relation of women's employment and infant mortality, based on a careful analysis of the available statistics of Massachusetts. The second is a comprehensive original study of the infant mortality in Fall River, Mass., during one year, in relation to the work of the mother before and after confinement.

MASSACHUSETTS STATISTICS OF INFANT MORTALITY.

The analysis of Massachusetts statistics emphasizes the complex nature of the conditions which have relation to the employment of married women and the causes of infant mortality. In the cities of New England certain factors which in the past have been ignored in the consideration of the problem are with fair uniformity coexistent with a high infant mortality rate; these being (1) a high proportion of foreign born, (2) a high female illiteracy, and (3) a high birth rate. These factors operate with equal force over large or small areas—that is, the results when the six New England States are regarded as units are not different than when individual cities of the State of Massachusetts are studied as units, the degree of urbanization of the population taking the place of the size of towns, and accompanying the infant death rate with almost perfect regularity through the last three census periods.

The two other factors considered in this study relate themselves with less regularity to the infant death rate. The first of these is the size of cities. Large towns, in general, have rather higher rates than small towns, although, as already noted, this relationship is found not to be invariable. For example, in the decade 1898-1907 the city of Lynn, with a population of 77,042, had an infant death rate of but 183 per 1,000 births, while Lawrence, with a population of 70,050, had a rate of 181.2 per 1,000; Brockton, with a population of 47,794, of only 109.5 per 1,000 births, while Chicopee, with a population of only 20,191, had an infant death rate of 178.4 per 1,000 births.

The second factor which is found, statistically speaking, associated very uncertainly, to say the least, with the infant death rate, is the subject of this study—the proportion of women engaged in extra-domestic occupations.

It is true that the six cities of Massachusetts having an extremely high infant death rate have also a high proportion of women employed in extra-domestic occupations. It is likewise true that these six cities with abnormal infant death rates have a considerably higher proportion of women so employed than the six industrial cities with low infant mortality rates presented with them for purposes of comparison. But the fact must not be lost sight of that, while the six cities with low infant death rates do show a smaller proportion of women industrially employed than the six high mortality cities, the per cent of women so employed in the six low mortality cities is a little higher than the per cent for the 32 Massachusetts cities, and considerably higher than the per cent for the State of Massachusetts as a whole, while the infant mortality rate not only is lower than the rate for the 32 cities, but is 19 per 1,000 births less than the rate for the State at large, in which rural districts have been included. It will be seen that this result clearly disproves the contention that the extra-domestic employment of women is the dominant factor in determining the infant death rate so far as the Massachusetts cities are concerned.

On the real question of prime importance in the relation of women's work to infant mortality—namely, how many mothers of young children return to industrial employment outside of their homes before their infants have attained the age of 1 year—little accurate information is available. The report on the condition of woman and child wage-earners in the cotton textile industry shows that only 23, or 14.1 per cent, out of 163 married women working in cotton mills who are scheduled in New England had children under 3 years of age.[1] The distribution of these 23 children by ages in detail is not shown, but it is obvious that the proportion of women working in the cotton mills who have infants (children under 1 year) at home must be very small at any particular time, and in no wise sufficient to account for the excessive infant mortality rate of the textile cities.

INFANT MORTALITY IN FALL RIVER, MASS.

It has often been the subject of comment both here and in other countries, notably in England, that in cities where a large proportion of the women are industrially employed a high rate of infant

[1] The report on the condition of woman and child wage earners in the cotton textile industry (Vol. I of this report, pp. 1010 and 1032) shows that out of 407 married women living in the Massachusetts cotton-mill families visited in the course of the investigation of the Bureau of Labor only 101 married women were at work as wage earners at the time of the visits, and that only 13, or 12.9 per cent, of these were mothers of children under 3 years of age. Out of 806 married women living in the New England families included in the same investigation 175 married women were at work, and only 23, or 14.1 per cent, had children under 3 years of age. Compare Men's Ready-Made Clothing, Vol. II of this report, showing that only 9.9 per cent of the married women at work (not including home finishers) had children under 3 years of age; Glass Industry, Vol. III, with 14.1 per cent; and Silk Industry, Vol. IV, with 17.3 per cent.

mortality—that is, under 1 year—is almost always ... of the cities which are centers of the textile ... ous for a high mortality at all ages and ... tality under 1 year. Because of this ... the extensive employment of women ... it has often been assumed that the excess ... industrial localities are chiefly due to ... of the mothers.

... In Fall ... was 177.6, ... in Boston ... Blackburn, ... larger than

REASON FOR SELECTION ...

In order to test the validity ... real causes of the high infant ... tion in detail of the conditions ... trial employment of women ... seemed the most feasible ... Fall River seemed to be the ... 1905 nearly 17,000, or 38.3 ... over, were gainfully ... were employed in cotton ... third were married ... Fall River for the ... of the population. ... period, out of ... 1 year, and in ... general death ... vailing in any ... of deaths ... high, being ...

The striking ... not only in ... as well, is the ... gastritis, ... of all deaths ... the 10- ...

The ... infant ... importa ... tion ... desti ... comme ... ...

YEAR FROM WHERE.

... of deaths due ... proportion ... Fall River ... area of the ... Borough of ... 1910, 114 per ... 131 per cent

... TO DIARRHEA, ... LOCALITIES.

Per cent of deaths under 1 year due to diarrhea, enteritis, and gastritis.	Per cent of excess in proportion of deaths due to diarrhea, enteritis, and gastritis in Fall River over locality specified.[1]
38.3	.....
27.9	37
27.9	37
26.3	46
17.9	114
16.6	131

... the same year are ... in 1908, namely, ... cases were corre- ... ion figures for 1910 ... as in 1908 in these

... DISEASES IN

... th rates per 1,000 ... owing for Fall River, ... hsing then, for the pe- ... Borough of Man- ... cent above that ... of Blackburn,

SCOPE AND METHOD OF INVESTIGATION.

For the purposes of the investigation the year 1908 was selected. Copies were made of the official records of all children dying under 1 year from any cause in Fall River and of all stillbirths. Visits were then made to the homes of the children by experienced agents of the Bureau of Labor,[1] and detailed inquiries were made concerning the employment of the mother, the time of discontinuing work before the birth of the child, the time of resuming work after the birth of the child, if work was so resumed, the character of the feeding of the child, the care given to the child, especially during any absence of the mother at work, and various other matters tending to throw light in any way upon the direct or indirect causes of death. Much difficulty was found in tracing some of the families and in securing accurate information from the mother and other members of the family. Doctors were interviewed when possible for supplementary information.

Of the 859 children dying under 1 year in Fall River during 1908, the desired particulars were obtained concerning 580, and of the 227 stillborn children recorded, particulars were obtained concerning 165. Of the 580 children dying under 1 year whose families were interviewed, it was found that in the case of 266, or 45.9 per cent, the mothers during the period of pregnancy were at work outside the home, while in the case of 314 the mothers were not at any time during that period at work away from home. Of the 165 mothers of stillborn children who were traced, 69, or 41.8 per cent, had been employed at some time during pregnancy. For 279 of the children born living and for 62 of the stillborn the family could not be found and the information which is here available is therefore limited to the details given in the official records.

The representative character of the cases concerning which detailed information was secured is indicated by a comparison of the causes of death and of the country of birth of the parents of the children. No significant differences were found between the 580 children for whom particulars were obtained and the 279 whose families could not be found.

EXCESSIVE INFANT MORTALITY IN FALL RIVER.

The first result of a study of Fall River infant-mortality figures and a comparison with those of other localities is to establish beyond

[1] Probably it is important in presenting the results of an investigation of this kind and in this place to emphasize the method of securing the data, for in work of this kind reasonably reliable data can be secured only by visits to the homes, and even then agents of experience and judgment must be employed. The three agents who were engaged in the collection of the data in this investigation had had considerable previous training in the field work of the Bureau of Labor, and one of them, Dr. Laura M. Weisker, in immediate charge of the field work, was also a physician of experience.

question the fact that the Fall River rates are excessive. In Fall River the death rate under 1 year per 1,000 births in 1908 was 177.6, while in 1910 in the Borough of Manhattan it was 134.6, in Boston 126, in England and Wales (in 1908) 120.3, and in Blackburn, England, an important English textile city somewhat larger than Fall River, 157 (for a 10-year period).

COMPARATIVE PER CENT OF DEATHS UNDER ONE YEAR FROM SPECIFIED CAUSES IN FALL RIVER AND ELSEWHERE.

A comparison limited to a study of the per cent of deaths due to the more important causes quickly shows that the proportion of deaths due to diarrhea, enteritis, or gastritis in Fall River in 1908 was 37 per cent above that in the registration area of the United States in 1908, 37 per cent above that in the Borough of Manhattan and 46 per cent above that in Boston in 1910, 114 per cent above that in England and Wales in 1908, and 131 per cent above that for 10 years in Blackburn.

COMPARISON OF PER CENT OF TOTAL DEATHS UNDER 1 YEAR DUE TO DIARRHEA, ENTERITIS, AND GASTRITIS IN FALL RIVER AND IN OTHER LOCALITIES.

Locality.	Per cent of deaths under 1 year due to diarrhea, enteritis, and gastritis.	Per cent of excess in proportion of deaths due to diarrhea, enteritis, and gastritis in Fall River over locality specified.[1]
Fall River, 1908	38.3	.....
Registration area, United States, 1908	27.9	37
Manhattan Borough, 1910	27.9	37
Boston, 1910	26.3	46
England and Wales, 1908	17.9	114
Blackburn, England, 1901-1910	16.6	131

[1] For comparison with the Fall River figures of 1908 those for England and Wales in the same year are taken. In 1909 and 1910 the rates for England and Wales were considerably lower than in 1908, namely, 108.73 and 105.44, respectively, per 1,000 births, and the death rates from diarrheal diseases were correspondingly lower (12.64 in both 1909 and 1910). For Manhattan Borough and for Boston figures for 1910 were taken as likely to be more nearly correct than those of earlier years. The rates in 1908 in these cities were, Manhattan Borough 134, Boston 140.

DEATH RATES PER 1,000 BIRTHS FROM SPECIFIED DISEASES IN FALL RIVER AND ELSEWHERE.

A comparison on the more exact basis of death rates per 1,000 births makes a very much more unfavorable showing for Fall River, its rate for diarrhea, enteritis, and gastritis being then, for the periods named above, 81 per cent above that for the Borough of Manhattan, 105 per cent above that for Boston, 215 per cent above that of England and Wales, and 101 per cent above that of Blackburn, England, for a 10-year period.

COMPARISON OF DEATH RATES PER 1,000 BIRTHS FROM DIARRHEA, ENTERITIS, AND GASTRITIS, AND FROM NONDIARRHEAL DISEASES IN FALL RIVER AND IN OTHER LOCALITIES.

Locality.	Death rate under 1 year per 1,000 births.			Per cent of excess of Fall River death rate under 1 year per 1,000 births over city specified.		
	Diarrhea, enteritis, and gastritis.	Nondiarrheal diseases.	All causes.	Diarrhea, enteritis, and gastritis.	Nondiarrheal diseases.	All causes.
Fall River, 1908	68.1	109.5	177.6	.....	.....	.....
Manhattan Borough, 1910	37.6	97.0	134.6	81	13	32
Boston, 1910	33.2	92.8	126.0	105	18	41
England and Wales, 1908	21.6	98.7	120.3	215	11	48
Blackburn, England, 1901–1910	26.1	130.9	157.0	161	[1] 20	13

[1] Per cent of excess of Blackburn over Fall River rate.

DEATH RATES AT DIFFERENT AGES UNDER ONE YEAR IN FALL RIVER AND ELSEWHERE.

When we compare the death rates per 1,000 births at various ages under 1 year in Fall River and in other localities we find that the Fall River rate for ages under 1 month is not excessive, corresponding almost exactly with that for England and Wales, but that at ages over 3 months the Fall River rates are very greatly excessive.

COMPARISON OF DEATH RATES AT DIFFERENT AGES UNDER 1 YEAR PER 1,000 BIRTHS, FALL RIVER, MASS., ENGLAND AND WALES, AND BLACKBURN, ENGLAND.

Locality.	Under 1 month.	Under 3 months.	3 months and under 6 months.	6 months and over.	Total.
Fall River, 1908	40.5	72.3	46.9	58.4	177.6
England and Wales, 1908	40.3	64.4	23.6	32.4	120.3
Blackburn, 1910	46.1	69.5	26.1	41.4	136.0

The comparisons between Fall River and localities having a more favorable infant mortality rate indicate quite clearly that wherever death rates are excessive the excess is largely to be accounted for by a high rate from diarrheal diseases. This of itself shows that such excessive rates are largely preventable. The additional fact that wherever rates are excessive the greatest differences exist at ages over 3 months shows again that to a considerable extent the high rates are due to preventable causes.

REDUCTION OF INFANT DEATH RATES IN ENGLAND.

It is possible to throw light upon the situation by turning to English experience, where figures are available covering a period of years, to show the causes where organized effort has resulted in the

greatest improvement in the infant death rates. Here a comparison of the rates from 1901 to 1909 shows in the most striking way the reduction in death rates that has been brought about within that brief period. While the greatest reduction, a reduction of 45 per cent (1909 compared with average 1901–1904) has been brought about in death rates from diarrheal diseases, the improvement in rates from practically all of the other causes also is very great, and even in death rates from the developmental and wasting diseases of earliest infancy a reduction of 6 per cent has been brought about.

PER CENT OF REDUCTION IN DEATH RATES AT DIFFERENT AGES UNDER 1 YEAR, PER 1,000 BIRTHS, BETWEEN 1901-1904 AND 1909, ENGLAND AND WALES, BY CAUSES.

Cause of death.	Per cent of total deaths due to specified cause, 1901-1904.	Per cent of reduction in death rates, 1909, over average, 1901-1904.			
		Under 3 months.	3 months and under 6 months.	6 months and over.	Total under 1 year.
Developmental and wasting diseases [1]	33	5	19	14	6
Diarrheal diseases [2]	19	36	47	50	45
Convulsions	11	31	38	41	31
Tuberculosis (all forms)	4	41	38	31	35
Pneumonia, bronchitis, and laryngitis	17	20	21	15	18
All other causes	17	14	27	23	22
Total	100	15	31	29	22

[1] Includes premature birth, congenital defects, want of breast milk, injury at birth, atrophy, debility, and marasmus.
[2] Includes diarrhea, enteritis, gastroenteritis, gastrointestinal catarrh, gastritis, and gastric catarrh.

EFFECT OF INDUSTRIAL EMPLOYMENT OF MOTHER BEFORE BIRTH OF CHILD.

The importance in Fall River of the mothers industrially employed outside the home before childbirth, as related to the infant mortality in 1908, is indicated by the fact that of the 580 reported 266, or 45.9 per cent, were so employed, and 314, or 54.1 per cent, were at home.

The importance of the mothers employed outside the home after childbirth and while the child was living, as related to the infant mortality of Fall River, is indicated by the fact that of the 578 reported 83, or 14.4 per cent, were so employed. This number is subject to further qualification in certain respects, because of the fact that out of this 83 only 41 were at the time just prior to their return to work nursing their children. The other 42 had either never nursed their children or had previously discontinued nursing for reasons having no relation to their return to work.

Work on the part of the mother before the birth of the child, whether in the home or industrially, if involving strain or exhaustion, and especially if continued too near childbirth, might be expected to increase stillbirths and deaths due to premature birth, congenital malformation and defects, congenital debility, and other diseases, but in less degree.

The causes of death above named are chiefly important in earliest infancy, and if the mother's work before the birth of the child was a seriously injurious influence in any considerable number of cases, that fact should be disclosed in a study and comparison of the deaths of children of the two classes, mothers at home and mothers at work.

RELATIVE MORTALITY OF INFANTS OF MOTHERS AT HOME AND MOTHERS AT WORK.

A comparison of the children of mothers at home and of mothers at work shows that when all causes of death are considered a slightly greater percentage of the children of mothers at home died during the first week, during the first month, and during the first three months of life. This will be best seen in the following table:

PER CENT OF DEATHS FROM ALL CAUSES UNDER 1 YEAR OCCURRING UNDER 1 WEEK, UNDER 1 MONTH, AND UNDER 3 MONTHS, FOR CHILDREN OF MOTHERSAT HOME AND OF MOTHERS AT WORK.

Work of mother before birth of child.	Per cent of total deaths under 1 year which occurred—		
	Under 1 week.	Under 1 month.	Under 3 months.
Mothers at home	12.1	24.8	42.9
Mothers at work	10.2	22.2	41.4

STILLBIRTHS IN RELATION TO MOTHERS' WORK BEFORE CHILDBIRTH.

A slightly higher percentage of stillborn children is found in the case of mothers at home, 23.4 per cent of the deaths of the children of mothers at home being stillbirths, while for the children of mothers at work only 20.6 per cent were stillbirths. In order to ascertain whether the apparently greater importance of stillbirths among the children of mothers at home is due to the severity of work as compared with millwork or to other causes an attempt was made by inquiry in the home to ascertain in as many cases as possible anything in the work of the mother, her condition, or the conditions in the home to which the stillbirth of the child might be attributed.

Among the mothers at work away from home the stillbirth could be traced to the mother's work in only 9 cases, the cause in 7 being the severity or unsuitable character of the work, and in 2 cases the continuance of the work too near childbirth. In addition to the 7 stillbirths due to the character of the mother's work there were 3 cases where the

mother had been employed in the mill during pregnancy but where the stillbirth was due directly to housework at home after leaving the mill. The 7 stillbirths apparently traceable to the mothers' work constituted 12 per cent of the total of 58 mothers at millwork from whom detailed information was secured. Among the mothers at home in 10 cases the stillbirth was apparently traceable to the character of the mother's work, and in 2 cases to its continuance too near childbirth. These 10 cases, it should be said, included 3 cases of mothers who had been employed in the mill but had given up millwork in expectation of childbirth and were engaged only in housework. These 10 cases constitute 13 per cent of the 75 mothers at home (72 at home plus 3 at work in mill and later at home).

Comparing further the per cent of stillbirths traceable to sickness or ill health of the mother, there were 12 cases among mothers at work, constituting 22 per cent of the total for whom reports were received, and 20 cases among mothers at home, constituting 27 per cent of the total mothers at home.

These comparisons would seem to indicate that so far as stillbirths were traceable to a cause the work of the mother in the mill and sickness or ill health of the mother so employed were not responsible for stillbirths in any greater degree among the mothers at work than among the mothers at home. It is necessary to point out, however, that the facts as presented here can hardly have an exact value, as the causes can not be known of a certainty in all these cases. Moreover, it is probably true that in a number of cases the reported sickness or ill health of the mother at home was due to former employment in the cotton mill, although it is necessary to say that no such case was identified among any of the mothers included in this table. Furthermore, sickness and ill health are not uncommon among women who are not employed in severe labor, either in the factory or in the home, and many such cases are due to obscure causes. Some also, as here, among both mothers at work and mothers at home are due to accidents or improper treatment of previous births.

CONDITION OF CHILDREN AT BIRTH IN RELATION TO MOTHERS' WORK BEFORE CHILDBIRTH.

The condition of the children at birth, which may be taken as an index of the effect of antenatal influences, will be indicated by the percentage of total deaths which were due to the diseases of early infancy (premature birth, congenital malformation, and congenital debility under three months). A comparison is made in the follow-

ing table for the children of mothers at home and of mothers at work:

PER CENT OF TOTAL DEATHS UNDER 1 YEAR (NOT INCLUDING STILLBIRTHS) WHICH WERE DUE TO DISEASES OF EARLY INFANCY (PREMATURE BIRTH, CONGENITAL MALFORMATION, AND CONGENITAL DEBILITY UNDER 3 MONTHS) FOR CHILDREN OF MOTHERS AT HOME AND OF MOTHERS AT WORK.

Work of mother before birth of child.	Total deaths, all causes.	Deaths due to diseases of early infancy.				
		Premature birth.	Congenital malformation.	Congenital debility under 3 months.	Total.	
					Number.	Per cent.
Mothers at home	314	16	8	49	73	23.2
Mothers at work outside the home	266	20	4	31	55	20.7
Total	580	36	12	80	128	22.1

From these figures it appears that while deaths from premature birth and congenital malformations together were relatively more numerous among the children of mothers at work, yet when the deaths from congenital debility under 3 months are added, the children of mothers at home made a distinctly unfavorable showing—23.2 per cent against 20.7 per cent.

The large per cent of children dying from various causes during the early weeks of life suggests that many of the children were not well and strong at birth, due, perhaps, among other causes, to the injurious influence of the mother's work. In the course of the investigation an attempt was made by questioning the mothers of the children to ascertain the number of those dying under 1 year who at birth were not well and strong. Information so obtained, while based in many cases upon the statement of the physician to the mother, would in many other cases rest largely upon the mother's judgment.

NUMBER AND PER CENT OF CHILDREN DYING UNDER 1 YEAR (NOT INCLUDING STILLBIRTHS), FROM SPECIFIED CAUSES, WHO WERE REPORTED AS NOT WELL AND STRONG AT BIRTH, ACCORDING TO WORK OF MOTHER.

Cause of death.	Total children dying under 1 year.	Children not well and strong at birth.	
		Number.	Per cent.
Mothers at home:			
Premature birth and congenital malformation	24	24	100.0
Congenital debility	77	46	59.7
All other causes	205	45	21.8
Total, all causes	306	115	37.6
Mothers at work:			
Premature birth and congenital malformation	24	24	100.0
Congenital debility	53	30	56.6
All other causes	178	51	28.6
Total, all causes	255	105	41.2

According to this table, 59.7 per cent of the children of mothers at home dying from congenital debility were reported as not well and strong at birth. Of the children of mothers at work dying from the same cause, 56.6 per cent were reported as not well and strong at birth. Of the children of mothers at home dying from all other causes (excluding premature birth and congenital malformation), 21.8 per cent were reported as not well and strong at birth, as compared with 28.6 per cent of the children of mothers at work. Taking together all the children of mothers at home, 37.6 per cent were reported as not well and strong at birth, as against 41.2 per cent of the children of mothers at work.

Apparently, then, antenatal conditions of some kind have resulted in a slightly larger percentage of children not well and strong at birth among the group "children of mothers at work" than among the children of mothers at home. Among the children dying of congenital debility, however, where the fact should be especially noticeable, the percentage is slightly higher for children of mothers at home.

Examining the two groups, "motners at home" and "mothers at work outside the home," more in detail with reference to the work of the mother, a comparison may be made of the children not well and strong at birth (including both those born living and the stillborn) in relation to the whole number of children dying under 1 year, including stillborn.

NUMBER AND PER CENT OF TOTAL CHILDREN DYING UNDER 1 YEAR (INCLUDING STILLBORN) WHO WERE REPORTED AS WELL AND STRONG AT BIRTH, NOT WELL AND STRONG AT BIRTH, AND STILLBORN, ACCORDING TO WORK OF MOTHER BEFORE BIRTH OF CHILD.

Work of mother before birth of child.	Number.				Per cent			
	Children well and strong at birth.	Children not well and strong at birth.		Total.	Children well and strong at birth.	Children not well and strong at birth.		Total.
		Born living.	Still-born.			Born living.	Still-born.	
Mothers at home:								
At housework only	182	112	93	[1] 387	47.0	29.0	24.0	100.0
At other work	5	1	2	8	62.5	12.5	25.0	100.0
At no work	4	2	1	7	57.1	28.6	14.3	100.0
Total	191	115	96	[1] 402	47.5	28.6	23.9	100.0
Mothers at work outside the home before birth of child:								
At cotton-mill work	136	90	65	[2] 297	45.8	32.3	21.9	100.0
At other work	14	9	4	[2] 27	51.9	33.3	14.8	100.0
Total	150	105	69	[2] 324	46.3	32.4	21.3	100.0
Grand total	341	220	165	[3] 726	47.0	30.3	22.7	100.0

[1] Not including 4, child's condition not reported.
[2] Not including 9, child's condition not reported.
[3] Not including 2, child's condition not reported.
[4] Not including 11, child's condition not reported.
[5] Not including 19, child's condition not reported.

Here, as in the preceding comparison, a slightly larger per cent of the children of mothers at work are found reported as not well and strong at birth. This excess is slightly increased if the comparison be restricted to the two more important classes, "mothers at housework only" and "mothers at millwork." For the former class 53 per cent of the children were reported as not well and strong at birth, and for the latter class 54.2 per cent. The significance in these figures appears to be not in the slight excess of children not well and strong at birth for the mothers at work, but in the fact that for the mothers at home the percentage is practically as high, plainly indicating that if there is an injurious effect of millwork there must also be in many of these cases an effect almost in the same degree injurious resulting from the work at home. In making this statement it is, of course, necessary to remember that to an extent which can not be accurately measured the group "mothers at home" includes women who were in early life engaged in millwork and are perhaps still subject to the effect upon their health of this earlier work.

DISCONTINUANCE OF MOTHERS' WORK BEFORE CHILDBIRTH.

Perhaps quite as important as the character of the work of the mother is the length of time before birth of child that the mother stopped work. For the mothers at home the question is difficult of an answer which is of value. A very large number reported that housework was continued up to the day of birth. For very many of these this did not mean severe or long-continued work. For others the hardest kind of work was reported, and premature births and stillbirths could be traced directly to this cause. For the most part, however, the time of discontinuance of work before the birth of the child can not be regarded as significant as here reported in the cases of mothers at home. For the mothers at work, however, conditions are quite different. Here in nearly all cases the mothers were employed outside the home in cotton-mill work and continued at their usual mill duties up to the day shown in the table.

NUMBER AND PER CENT OF TOTAL CHILDREN DYING UNDER 1 YEAR (INCLUDING STILLBORN) WHO WERE REPORTED AS NOT WELL AND STRONG AT BIRTH FOR MOTHERS AT HOME AND MOTHERS AT WORK, ACCORDING TO LENGTH OF TIME BEFORE BIRTH OF CHILD THAT MOTHER STOPPED WORK.

Length of time before birth of child that mother stopped work.	Mothers at home.					Mothers at work outside the home before birth of child.				
	Total children, including stillborn.	Children not well and strong at birth.				Total children, including stillborn.	Children not well and strong at birth.			
		Number.			Per cent.		Number.			Per cent.
		Born living.	Stillborn.	Total.			Born living.	Stillborn.	Total.	
Under 4 days	271	71	59	130	48.0	14	6	5	11	78.6
4 days and under 1 week	5	2	.....	2	40.0	2	1	1	2	100.0
1 week and under 2 weeks	33	11	9	20	60.6	11	3	2	5	45.5
2 weeks and under 3 weeks	7	1	3	4	57.1	32	11	10	21	65.6
3 weeks and under 1 month	1	1	.....	1	100.0	5	.....	3	3	60.0
1 month and under 2 months	5	2	.....	2	40.0	31	10	5	15	48.4
2 months and under 3 months	2	1	.....	1	50.0	54	14	10	24	44.4
3 months and under 4 months	3	1	.....	1	33.3	37	9	8	17	45.9
4 months and under 5 months	1	1	.....	1	100.0	25	11	3	14	56.0
5 months and under 6 months	1	.....	1	1	100.0	16	6	3	9	56.3
6 months and over	9	5	.....	5	55.6	72	28	11	39	54.4
Total	338	96	72	168	49.7	303	99	61	160	52.8
Time of stopping work not reported	64	19	24	51	79.7	21	6	8	14	66.7
Total	[1] 402	115	96	219	54.5	[2] 324	105	69	174	53.6

[1] Not including 8 children, condition at birth not reported.
[2] Not including 11 children, condition at birth not reported.

For the mothers at home it will be seen that in 271 out of 338 cases reported work was continued up to within four days of childbirth, while for the mothers at work outside the home out of 303 cases reported, 14 worked up to within four days, 27 less than two weeks, and 64, or 21 per cent of all, less than one month. For the mothers at home the per cent of the children who were not well and strong at birth was not higher than the average, even in the group working up to within four days of childbirth. For the mothers at work outside the home, those continuing work up to within a month or less of childbirth show an excessive percentage of children not well and strong at birth. In all the groups discontinuing work at an earlier date the percentages were below the average, save in the last two groups, where it was only slightly in excess.

RELATION BETWEEN MOTHER'S WORK AND CHILD'S CONDITION AT BIRTH.

It has appeared from the foregoing tables that in a comparison of the condition at birth of children of mothers at home and mothers at work, approximately the same percentage were not well and strong at birth. Inquiries were made attempting to trace, so far as possible, any apparent relation between the child's condition at birth

and the mother's work. Such relationship, however, except in a small proportion of cases, is difficult to trace, for the causes responsible for cases of premature birth, congenital malformation, or a condition of weakness at birth are often exceedingly obscure and very complex. It can not be supposed that what is here presented is more than suggestive of the causes which are operating in the two classes, "mothers at home" and "mothers at work," to produce a condition of weakness or ill health in the child at birth.

Of the 302 children dying under 1 year whose mothers were engaged in housework at home, the condition of 53 children not well and strong at birth was traced to an apparent cause. The child's condition in 14 cases was due to injury at birth or difficult birth, in 14 cases to the sickness or ill health of the mother, and in 9 cases to the character of the mother's work. These 9 cases, however, include 5 cases where the mother was employed during pregnancy outside the home, but where it could be stated definitely that the child's condition at birth was due directly to overwork at home after leaving the mill. In these cases the overwork of special importance was heavy washing and lifting in connection with the same.

Of the 243 children of mothers engaged in millwork outside the home, 42 cases of children not well and strong at birth could be traced to an apparent cause. In 15 cases this cause was the sickness or ill health of the mother, in 11 cases it was the character of the mother's work, and in 9 cases, where it did not appear that the character of the mother's work was especially unsuitable and injurious, it did appear quite clearly that it was continued so long and so near childbirth as to be directly responsible for the child's weakness or ill health at birth.

SUMMARY OF SECTION.

Summarizing the results of the study of the effect upon the children of the mother's employment before childbirth, the conclusion must be reached that in Fall River, as indicated by this one year's experience, no marked differences are discoverable between the children of mothers at home and those of mothers at work outside the home. A slightly larger per cent of stillbirths was reported for the mothers at home, but the per cent of the stillbirths which could be traced to the mother's work was the same for mothers at home and for mothers at work. The percentage of total deaths due to diseases of early infancy (indicating prematurity, immaturity, or defects) was higher for the children of mothers at home than for the children of mothers at work. The percentage of children not well and strong at birth (stillbirths included) was almost exactly the same for mothers at home and for mothers at work. It would appear, then,

that the conditions which were found existing do not indicate that the work of the mother in the cotton mill before childbirth was producing results noticeably different from the work of mothers at home. It must be borne in mind, however, that the two classes—mothers at work and mothers at home—are not sharply defined and that the group, mothers at home, always includes a considerable number of women who were formerly engaged in millwork and whose physical condition may still be affected in some degree by such earlier employment.

EFFECT OF INDUSTRIAL EMPLOYMENT OF MOTHER AFTER BIRTH OF CHILD.

In regard to the relation of the mother's work outside the home after childbirth to the high infant mortality in Fall River, the question of first importance, of course, is, In what proportion of the cases of children dying under 1 year did the mother work outside the home after childbirth, thus depriving the child of the mother's care? The answer to this question will give the measure of the maximum possible effect of the mother's work outside the home after childbirth upon the infant mortality. The results of this investigation show that in Fall River in 1908 only 83, or 14.4 per cent, of the 578 children dying under 1 year, concerning whom information could be secured, were deprived of the mother's care because of her going to work after childbirth.

Among these mothers who went to work after childbirth nearly all the races are represented, in much the same proportions as in the much larger group of mothers at work before childbirth. While it is apparent from the smaller number of children which they had borne for the groups as a whole the mothers at work were younger than the mothers at home, yet among these mothers who went to work after childbirth, in certain cases the average number of children is so large as to indicate women no longer young. Thus, the 18 French-Canadian mothers show an average of 7.1 children, the 6 English mothers 6.8 children, and the 4 Irish mothers 6.3. The Portuguese mothers, 27 in number, showed an average of only 3.4 children. This comparatively low average was no doubt due to the fact that the Portuguese cotton-mill operatives in Fall River are largely recent immigrants, and as most of them came to this country seeking work in the cotton mill it is, of course, to be expected that they are nearly all comparatively young.

It has been shown that only 83, or 14.4 per cent, of the 578 mothers reporting went to work outside the home after childbirth and while the child was living. Of this number 11 (13.3 per cent) went to work

during the first month and 17 (20.5 per cent) during the second month. Of the mothers at home a great majority resumed work within one month.

In the absence of the mother, when the mother went to work, the care of the child was undertaken by the grandmother in 25 cases, by some other relative in 22 cases, and by a friend, neighbor, or hired attendant in 29 cases. For the remaining 7, no report was secured.

CHILDREN DYING UNDER ONE YEAR FROM SPECIFIED CAUSES, BY MOTHERS' EMPLOYMENT.

In the table which follows the causes of death of the children of mothers who went to work outside the home after childbirth are shown in comparison with the causes in the case of (1) the children of the mothers who were at home before and after childbirth, and (2) the children of the mothers who were at work outside the home before the birth of child, but did not return to work after childbirth.

NUMBER AND PER CENT OF CHILDREN DYING UNDER 1 YEAR FROM CERTAIN SPECIFIED CAUSES, CLASSIFIED ACCORDING TO THE MOTHER'S WORK BEFORE AND AFTER CHILDBIRTH.

Number.

Employment of mother after birth of child and while child was living.	Diseases of early infancy and congenital malformation.	Diarrhea, enteritis, and gastritis.	Convulsions.	Nontuberculous meningitis.	Pneumonia, bronchitis, and laryngitis.	Tuberculosis (all forms), whooping cough, measles.	All other causes.	Total, all causes.
Mothers at home before birth of child and not going to work	102	[1] 106	22	1	51	7	20	[1] 309
Mothers at work outside the home before birth of child, but did not return to work after childbirth	67	66	8	1	29	.....	15	186
Mothers at work outside the home before birth of child and returned to work after childbirth	13	[2] 52	2	.....	13	.....	3	[2] 83
Total	182	224	32	2	[3] 95	7	38	[3] 580

Per cent.

Mothers at home before birth of child and not going to work	33.0	34.3	7.1	0.3	16.5	2.3	6.5	100.0
Mothers at work outside the home before birth of child, but did not return to work after childbirth	36.0	35.5	4.3	.5	15.6	.....	8.1	100.0
Mothers at work outside the home before birth of child and returned to work after childbirth	15.7	62.7	2.4	.....	15.7	.....	3.6	100.0

[1] Not including 5 children of mothers at home before birth of child who went to work outside the home after childbirth.
[2] Including 5 children of mothers at home before birth of child who went to work outside the home after childbirth.
[3] Including 2 children not reported whether mother returned to work after childbirth.

Comparing the causes of death of the three classes of children, the striking similarity between the two groups of children whose mothers were at home after childbirth is first to be noted. Diarrhea, enteritis, and gastritis were accountable for 34.3 per cent of the deaths among the children of mothers at home both before and after childbirth and 35.5 per cent among the children of mothers who were at work outside the home before the birth of child but who did not return to work after childbirth. The deaths from diseases of early infancy constituted 33 per cent in the former group and 36 per cent in the latter group. On the other hand, turning to the children of mothers at work after childbirth, it is found that 62.7 per cent of all deaths were due to diarrhea, enteritis, and gastritis.

It will be noticed that the per cent of deaths due to diseases of early infancy and congenital malformations are much higher among the children of mothers who did not return to work. The explanation of the difference in this latter case is in the fact that most of the children dying from this group of causes died within the early weeks of life, before it was possible for the mother to leave the home and go to work.

The high percentage of death from diarrheal diseases among children of mothers at work outside the home is not peculiar to mothers of any one country, but for natives of every country the percentage is in excess of the corresponding percentage among children of mothers at home.

ARTIFICIAL FEEDING.

Artificial feeding was, as shown in the following table, much more general among the children of mothers at work than among the children of mothers at home. The same percentage of the children were fed on fresh cow's milk (9.8 per cent), although when we consider those who were given cow's milk and at the same time nursed a much greater use of cow's milk is found among the mothers at work than among the mothers at home. The use of condensed milk is also more general among the mothers at work than among the mothers at home. The use of condensed milk among the mothers at home also exceeded the use of cow's milk. While 24.4 per cent of the mothers at home admitted giving solid food, among the mothers at work the percentage rose to 40.2.

The relation of the high percentage of deaths from diarrhea, enteritis, and gastritis to artificial feeding is brought out by the excess of the artificial feeding among the children who died from the diarrheal diseases as compared with the children dying from other causes.

NUMBER AND PER CENT OF CHILDREN DYING UNDER 1 YEAR FROM DIARRHEA, ENTERITIS, AND GASTRITIS WHO WERE GIVEN EACH SPECIFIED KIND OF FOOD, CLASSIFIED ACCORDING TO MOTHER'S WORK AFTER CHILDBIRTH.

Number.

Character of food.	Mothers at home after childbirth.			Mothers went to work outside the home after childbirth.			Total.		
	Deaths from diarrhea, enteritis, and gastritis.	Deaths from other causes.	Deaths from all causes.	Deaths from diarrhea, enteritis, and gastritis.	Deaths from other causes.	Deaths from all causes.	Deaths from diarrhea, enteritis, and gastritis.	Deaths from other causes.	Deaths from all causes.
Nursing exclusively	38	111	149	1	.....	1	39	111	150
Cow's milk	9	34	43	5	3	8	14	37	51
Cow's milk and nursing	12	12	24	8	2	10	20	14	34
Condensed milk	19	23	42	6	5	11	25	28	53
Condensed milk and nursing	12	15	27	9	5	14	21	20	41
Proprietary foods	9	9	18	.....	.....	.....	9	9	18
Proprietary foods and nursing	20	8	28	3	2	5	23	10	33
Other foods (usually solid foods) with any or all of preceding	12	10	22	7	5	12	19	15	34
Other foods (usually solid foods) with any or all of preceding and nursing	35	50	85	13	8	21	48	58	106
Total	166	272	438	52	30	82	218	302	520

Per cent.

Nursing exclusively	22.9	40.8	34.0	1.9	.....	1.2	17.9	36.8	28.8
Cow's milk	5.4	12.5	9.8	9.6	10.0	9.8	6.4	12.3	9.8
Cow's milk and nursing	7.2	4.4	5.5	15.4	6.7	12.2	9.2	4.6	6.5
Condensed milk	11.4	8.5	9.6	11.5	16.7	13.4	11.5	9.3	10.2
Condensed milk and nursing	7.2	5.5	6.2	17.3	16.7	17.1	9.6	6.6	7.9
Proprietary foods	5.4	3.3	4.1	.....	.....	.....	4.1	3.0	3.5
Proprietary foods and nursing	12.0	2.9	6.4	5.8	6.7	6.1	10.6	3.3	6.3
Other foods (usually solid foods) with any or all of preceding	7.2	3.7	5.0	13.5	16.7	14.6	8.7	5.0	6.5
Other foods (usually solid foods) with any or all of preceding and nursing	21.1	18.4	19.4	25.0	26.7	25.6	22.0	19.2	20.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

DEATHS FROM DIARRHEAL DISEASES IN RELATION TO MOTHERS' WORK AFTER CHILDBIRTH.

The children of mothers at work, when compared with the children of mothers at home, show an excessive percentage of deaths from diarrheal diseases regardless of the character of the food, suggesting that a lack of care or improper care, as well as the difference in the feeding, played an important part. This is shown in the following table:

PER CENT OF TOTAL DEATHS DUE TO DIARRHEA, ENTERITIS, AND GASTRITIS AMONG CHILDREN GIVEN EACH SPECIFIED KIND OF FOOD, CLASSIFIED ACCORDING TO MOTHER'S WORK AFTER CHILDBIRTH.

Character of food.	Mother at home after childbirth.			Mothers went to work outside the home after childbirth.			Total.		
	Deaths, all causes.	Deaths from diarrhea, enteritis, and gastritis.		Deaths, all causes.	Deaths from diarrhea, enteritis, and gastritis.		Deaths, all causes.	Deaths from diarrhea, enteritis, and gastritis.	
		Number.	Per cent of deaths, all causes.		Number.	Per cent of deaths, all causes.		Number.	Per cent of deaths, all causes.
Nursing exclusively	149	38	25.5	1	1	100.0	150	39	26.0
Cow's milk	43	9	20.9	8	5	62.5	51	14	27.5
Cow's milk and nursing	24	12	50.0	10	8	80.0	34	20	58.8
Condensed milk	42	19	45.2	11	6	54.5	53	25	47.1
Condensed milk and nursing	27	12	44.4	14	9	64.3	41	21	51.2
Proprietary foods	18	9	50.0	.....	.....	.....	18	9	50.0
Proprietary foods and nursing	28	20	71.4	5	3	60.0	33	23	69.7
Other foods (or only solid foods) with any or all of preceding	22	12	54.5	12	7	58.3	34	19	55.9
Other foods (or only solid foods) with any or all of preceding and nursing	85	35	41.2	21	13	61.9	106	48	45.3
Total	438	166	37.9	82	52	63.4	520	218	41.9

The lowest percentage of deaths from diarrheal diseases uniformly appears among children who were breast fed exclusively.[1] Next to these, children using fresh cow's milk showed much the lowest percentage of diarrheal deaths, the figures being 27.5 per cent against 45.3 per cent for solid food and nursing, the next higher, and 47.1 per cent for condensed milk. The highest, 69.7 per cent, was for proprietary foods and nursing, the next highest being 58.8 for cow's milk and nursing.

When the children of mothers at work are studied a somewhat different order appears, cow's milk exclusively and solid food and nursing both showing a very high percentage of diarrheal deaths. For the former class, however, it should be noted that the figures are rather small, as indeed they are for all the classes in the mothers-at-work group. It is probable that the much more unfavorable showing for cow's milk here is due to inferior quality and especially inferior care of the milk. A similar explanation may also account for the more unfavorable showing for condensed milk. It is likely that the lack of the mother's care, as well as the lack of her nursing, is an important factor here.

The very considerable number of deaths from diarrheal diseases among children who were given only mother's milk ought not to

[1] The exception among children of mothers at work may properly be ignored in this connection, as there was only a single instance.

excite surprise, although it is doubtless unnecessarily large. Even among breast-fed children the channels of possible infection are numerous. Where only breast milk is given and there is no possibility of infection through unclean food, infection might easily be introduced by means of the fingers or articles put into the mouth, both of which would often be unclean from dust or dirt from the clothing, the furniture, or the floor. All this would be true even in homes where a fair standard of living and of hygiene was maintained. The dangers in overcrowded, insanitary dwellings located in insanitary surroundings would be vastly increased.

Ignoring the groups with a total of 8 or less, the Polish mothers led all others in nursing, 55.6 per cent of their children being breast fed exclusively, against 33.6 per cent of the French Canadians, and 27.4 per cent of the Portuguese. Only 16.7 per cent of the Irish children were nursed exclusively.

In the use of cow's milk the Polish mothers are in the lead, with 27.8 per cent, the Irish coming next with 22.3 per cent, the Portuguese mothers being last with only 12.1 per cent.

The Irish mothers appear as using condensed milk most generally (38.9 per cent), the Americans being next with 23.6 per cent.

The Portuguese mothers led all others in the use of solid foods, 44.7 per cent of all admitting giving them either with or without breast feeding. A considerable number of cases were also found among the French Canadians and the Americans.

The principal excuses or reasons for not nursing for the 218 mothers at home who nursed a part of the time only or not at all were: No milk or milk deficient, 59.6 per cent, and illness or disability of mother or child, 26.1 per cent. For 14, or 6.4 per cent, it was reported that milk was present, but no good reason for not nursing could be given. For 81 mothers who went to work who nursed only a part of the time or not at all, the most important cause was naturally the intention to go to work, which was given by 39, or 48.1 per cent. Next in importance as a reason was "no milk or milk deficient," 33.3 per cent. In the case of 11, or 13.6 per cent, it was admitted that milk was present, but no good reason was given for not nursing.

The illness or disability of the mother or child as a reason for not nursing was a much more important cause with the mothers at home than with the mothers at work. This, however, is what one would expect, inasmuch as mothers seriously ill would, of course, be unable to go to work. It is not at all unlikely that a similar reason explains the excess of those reporting no milk or milk deficient among the mothers at home. The degree of ill health might result in a deficiency of milk and also cause the mother to remain at home,

even though the incapacity might not be sufficient to cause it to be reported as the main reason for not nursing.

If the two classes, "disinclination of mother" and "milk present, no reason given for not nursing," be regarded as the same, this reason accounts for 8.7 per cent among the mothers at home and 13.6 per cent among the mothers at work.

It is probable that in some of the cases where the mother reported no milk or milk deficient, the actual reason for the failure to nurse the child was her own ignorance or disinclination. The experience of physicians has shown that such reports can not be accepted as conclusive, and that in many cases where the mother states that she has no milk for her child a fair trial proves the contrary.

The disinclination of the mother does not appear as an acknowledged reason of failure to nurse the child save in 5 cases (including 3 among mothers at home and not nursing at all). It is almost certain, however, that this was the real reason in others of the 28 cases where milk was present and a more or less unsatisfactory reason for not nursing was given. Among these 28 mothers were 11 who later went to work. The period which elapsed before their going to work in these cases was as follows: Two at two weeks, 1 at three weeks, 4 at one month, 3 at three months, and 1 at four months. In 8 of these cases the excuse given was that the mother expected to return to work within a short time. It is clear that such a reason can not be accepted as expressing the full truth when the return to work was postponed one and even two months. In one case where the return to work took place in three weeks the excuse frankly given was the disinclination of the mother.

"Going to work" was given as an excuse or reason for shortening the period of nursing in only 40 cases, or 13.4 per cent of the total number who nursed only a part of the time or not at all. In these cases the breast feeding which was given for a time was discontinued because the mother went to work outside the home. In the one case where the mother went to work but continued nursing exclusively it is clear that the child would be unfavorably affected by the necessarily infrequent feeding. These cases, it may be noted, constituted only 7.9 per cent of the total of 520 for whom information in regard to feeding was obtained. The significance of this percentage is in the fact that it shows what part of the entire number of children had their period of nursing shortened by the fact that the mother went to work outside the home.

CONCLUSION.

To sum up, then, such conclusions as clearly appear from the study of Fall River experience in regard to the relation of the mother's work outside the home after childbirth to the high infant mortality

in that city, only 83, or 14.4 per cent of all children dying under 1 year, were found to have been deprived of the mother's care because of her going to work. This per cent represents the extent of the possible effect of the mother's absence from home.

But the extent to which the nursing of the child was affected by the mother's going to work is smaller than even this figure indicates, for in only 41 cases, or 7.9 per cent of all, was the mother's nursing in any way affected by her absence from home, and in the 42 other cases she either failed to nurse because of disinclination or inability, or had discontinued nursing for reasons not in any way connected with her return to work.

But while the number and per cent of children affected by the mother's absence from home was small, yet the causes of death among this number, as compared with the causes among children whose mothers remained at home, show strikingly the fatal effect in these few cases of the mother's absence and of the lack of her care and nursing. Thus, the proportion of deaths from diarrhea, enteritis, and gastritis among the children whose mothers went to work (62.7 per cent) was over 80 per cent in excess of that of the children whose mothers remained at home (34.6 per cent).

The real significance of this excess will not be fully realized until we recall the figures before given, showing that for Fall River as a whole the death rate under 1 year from diarrhea, enteritis, and gastritis was two or three times what it was in many other localities.

The high infant mortality of Fall River as a whole clearly is not due, except in very small part, to the excessive rate among the children of mothers at work outside the home, for the proportion of deaths due to diarrhea, enteritis, and gastritis, 38.6 per cent of all, for the city as a whole, only falls to 34.6 per cent when the children of mothers at home are taken separately.

What, then, it will be asked, are the causes of the excessive infant mortality in Fall River, an excess already seen to be chiefly in the deaths due to diarrhea, enteritis, and gastritis? The causes of the excessive mortality under 1 year in Fall River among the children of mothers at home are to be found in the absence of nursing and in the improper feeding and improper care, of which there are many examples. The much higher mortality among the children of the mothers who went to work after childbirth is plainly due chiefly to the greater extent of the absence of breast feeding and of the improper feeding and the additional evil influence of the withdrawal of the mother's care.

Among the mothers at home only 34 per cent of the children were nursed exclusively, while 24 per cent were given solid food, and for 16 per cent condensed milk was the principal food. Among the children of mothers who went to work only 1.2 per cent were

nursed exclusively, while 40 per cent were given solid food, and for 30.5 per cent condensed milk was the principal food. By both classes of mothers condensed milk was used more generally than fresh cow's milk. In over one-third of the cases where solid food was given its use was begun during the first week.

The large percentage of artificial feeding was found to be due to a considerable extent to deficiency of breast milk, which was much more frequent among the mothers at home than among those who went to work; but in many cases among the latter this artificial feeding was not due to a deficiency of breast milk, nor was it in any way a result of the mother's going to work.

The cause of the excessive infant mortality in Fall River may be summed up in a sentence as the mother's ignorance of proper feeding, of proper care, and of the simplest requirements of hygiene. To this all other causes must be regarded as secondary.

CHAPTER XIV.—CAUSES OF DEATH AMONG WOMAN AND CHILD COTTON-MILL OPERATIVES.

This volume, which forms the fourteenth part of the Report on the Condition of Woman and Child Wage Earners in the United States, contains the results of a study of the deaths occurring during three years in three typical cotton-manufacturing communities of New England. It was undertaken in the belief that—

Accurate mortality statistics of a given occupation constitute the only indisputable evidence as to the healthfulness or unhealthfulness of that occupation to the persons engaged in it.[1]

The report consists of three main parts—an explanation of the method of determining the healthfulness of an occupation by means of mortality statistics, with an exposition of the advantages inherent in this method; an intensive study, for the places and periods selected, of death rates and distribution of population among those aged 15 to 44; and a more general study of the same kind for the whole population aged 10 years and over.

ADVANTAGES OF METHOD OF INVESTIGATION USED.

There are two possible methods of determining the healthfulness of an industry, which may be defined respectively as the inspection method and the death-rate method.

Under the first method a careful inspection is made of as many as possible of those engaged in a given industry, and from the prevalence of ill health or disease among them conclusions are drawn as to the healthfulness of that pursuit. By the second method the death rate among those engaged in a given industry is accurately determined for a period sufficiently long to exclude the effect of temporary disturbances, and from a comparison of this death rate with that prevailing in similar age and sex groups outside of the industry conclusions are drawn as to the healthful or unhealthful character of the industry.[2]

The second method has marked advantages over the first or inspection method. First, it is based on indisputable facts, not on controvertible grounds. Thus, at least in the registration areas, in a given industry it is possible to establish beyond question that with-

[1] Vol. XIV, Causes of Death Among Woman and Child Cotton-Mill Operatives, p. 17.
[2] Idem, p. 22.

in a certain period a specified number of those engaged in the industry have died. The inspection method, on the other hand, starting with what is more or less a matter of opinion and judgment—the statement that at a given date so many of the employees under consideration were in poor health—brings in a second element of uncertainty when it attempts to define the degree of ill health existing among those affected.

Secondly, the death rate method is comprehensive, and hence affords a fairer basis for comparisons than the inspection method, which can never be more than partial and limited. In the registration areas it is possible to determine all the deaths which have occurred within a given group during a specified period, but it is obviously impossible to learn the number of cases of ill health which have occurred within the same group during a similar period. An inspection can deal with only a fraction of the employees in an industry and there is no way of knowing whether or not this fraction is really typical of the whole group. Even if it were typical, it would show only the conditions existing at the particular time when the inspection was made, which would not necessarily be at all the same as the conditions prevailing throughout a period of years.

Third, the death rate method excludes any possibility of bias, intentional or unconscious, on the part of the investigator, and when several investigators are working together, reduces to a minimum the effect of the personal equation. The inspection method is sure to deal with a number of border line cases which might be classed on either side of whatever line of demarcation has been fixed; where they will be classed depends upon the investigator's personal judgment, and when several investigators are working together it is exceedingly likely that cases of similar character will be included by one and cast out by another. By the death-rate method this element of confusion is avoided; death means death whether the classification is made by one investigator or by twenty.

Fourth, any study of the healthfulness of an occupation involves a consideration of the factors which tell against health—the anti-longevity factors. Obviously it is easier to isolate these factors and gain some idea of their relative importance in a case in which their work has been completed than in a case of which it can only be said that they have brought about some form of ill health. In the one case the completed result of their activity can be seen; in the other, only a partial result, which is not susceptible of definite measurement.

Together they have brought about a general condition known as ill health, or perhaps some specific condition such as tuberculosis or typhoid, but the inspection method affords no way of learning what

either the general or the specific condition means in years of life sacrificed or industrial efficiency lost.

But when it is stated that a given number of individuals of a designated age have died, it is evident that each one of them has suffered the greatest total physical injury to which any individual of that age is susceptible. The factors which have produced death at the specified age undoubtedly differ widely from case to case in number, in identity, and in individual harmfulness, but in every case their combined effect has been the same—death within a specified age period. Knowing, therefore, their combined effect, it becomes possible to determine with some degree of accuracy the relative degree of harmfulness of each factor.[1]

SCOPE OF THE INVESTIGATION.

Three cities—Fall River, Mass., Manchester, N. H., and Pawtucket, R. I.—were selected for study partly because they were predominantly cotton-manufacturing communities and partly because the number of cotton-mill operatives found in them—about one-sixth of the cotton-mill operatives of the whole country—is large enough to be considered as typical of conditions among the employees of the industry generally.

The investigation covered a period of three years, 1905, 1906, and 1907. The official record of every death of an individual aged 10 years and over was first copied, after which a visit was made to the place at which he had died, and relatives or friends were questioned as to details not given in the official certificate. Also the statement of the death certificate as to the decedent's occupation was verified or corrected. Corrections were frequently necessary.

The recorded number of female operative decedents in Fall River for the three-year period was 171. Of these, one-seventh, or 24, were found not to have been cotton operatives, while 152 who were recorded as having other or no occupations were really cotton operatives. The corrected number of female operative decedents, therefore, was 299; that is, the group as recorded was too small by 128.[2]

Throughout this study the term "cotton operatives" is used to mean only those persons whose work had been such as to expose them for many hours daily to the processes or hygienic conditions peculiar to a mill that manufactures cotton wadding, yarn, thread, or cloth. Office clerks, for instance, were not included, nor were engineers, firemen, watchmen, and yardmen, none of these being in anywise affected by conditions peculiar to cotton manufacturing. The term "cotton operative" was still further restricted by limiting it to those who were either working in a cotton mill at the time of death or who had left it not more than two years before.

[1] Vol. XIV, Causes of Death Among Woman and Child Cotton-Mill Operatives, p. 23.
[2] Idem, p. 47.

MORTALITY IN AGE GROUP 15 TO 44 YEARS.

This group was selected for intensive study for three reasons:

First, the massing of cotton operatives within its limits renders its selection desirable in order that the comparisons between operatives and nonoperatives may be valid; second, this is the period in which tuberculosis is most fatally active, and, since tuberculosis is the most important cause of death among female operatives, this age group is especially suitable for detailed study in an investigation into the causes of death among female operatives; and, third, the freedom of the group from the complications of either infancy or age renders it possible to trace the effect of a given cause upon death rates far more easily than can be done in the higher age groups, in which the influence of advancing years seriously affects the mortality.[1]

Concerning the first of the above reasons it is to be noted that 85 per cent of the whole operative population of the three cities studied was found within the limits of this age group, while as to the second, three-fourths (76 per cent) of the total deaths from tuberculosis occurring in Fall River during the three-year period were of persons aged from 15 to 44 years.

RELATIVE DEATH RATES OF OPERATIVES AND NONOPERATIVES, ALL CAUSES.

A detailed study is given of the mortality and of the distribution of the population in each of the component five-year age groups making up this period. As a result several facts appear to be clearly established.

First, in the population as a whole the male death rate shows a slight excess over the female alike from tuberculous and nontuberculous causes. The only exception to this is in Fall River, where for the three-year period the female death rate from nontuberculous causes shows a slight excess over the male.

But among the operatives the situation exactly reverses that prevailing among the general population. Female operatives show a uniform and marked excess in death rates over the male operatives, the only exception to this condition appearing in the figures of the three cities for one year, where the male operative death rate from all causes combined shows a slight excess over the corresponding female rate. Moreover the death rate of the female operatives is very much higher than that of female nonoperatives. This is true of both Fall River and the three cities for the one year and the three year period, and for every one of the component five-year age groups, excepting only the group aged 15 to 19 years. Among the members of this age group in the three cities combined for the one-

[1] Vol. XIV, Causes of Death Among Woman and Child Cotton-Mill Operatives, p. 55.

year period, the death rate of the nonoperative females was 4.17 against 4.02 for the operative females. Elsewhere the excess of the operative rate was often very marked. Thus, in the three cities for the group aged 20 to 24 years the death rate of the female operatives was over twice that of the nonoperatives, 7.63 to 3.58, and in the group aged 35 to 39 years in Fall River for three years the operative rate was 11.57 against a nonoperative rate of 5.90.

In order to present a comprehensive view of the variations within the 30-year age group, 15 to 44, and in order also to show the relation between those in this group and in the whole population aged 10 years and over, several tables have been prepared giving the leading facts for Fall River in condensed form. The first shows the general distribution of the population and of the deaths, together with a comparison of the death rates for operatives and nonoperatives in each 5-year age group.

NUMBER AND PER CENT OF OPERATIVES AND OF NONOPERATIVES, AND PER CENT OF TOTAL DEATHS OF MALES AND OF FEMALES IN EACH 5-YEAR GROUP, AND DEATH RATES PER 1,000 OF OPERATIVES AND NONOPERATIVES, FALL RIVER, 1906 TO 1907.

Age group.	Population.				Per cent of total deaths.		Death rates per 1,000.		
	Number.		Per cent of total						
	Operatives.	Nonoperatives.	Operatives.	Nonoperatives.	Operatives.	Nonoperatives.	Operatives.	Nonoperatives.	Per cent of excess of operatives over nonoperatives.
MALES.									
10 to 14 years	291	4,995	2.2	18.2	1.0	3.0	3.44	2.21	56
15 to 19 years	2,300	3,227	17.7	11.8	11.1	2.2	4.64	2.48	87
20 to 24 years	2,042	2,647	15.7	9.7	11.1	3.2	5.22	4.41	18
25 to 29 years	1,606	2,980	12.0	10.9	7.4	3.6	4.13	4.47	-8
30 to 34 years	1,571	2,679	12.1	9.8	14.3	6.2	8.70	8.46	3
35 to 39 years	1,529	2,370	11.7	8.6	9.1	7.5	5.67	11.69	-52
40 to 44 years	1,250	1,968	9.6	7.2	9.4	5.4	7.20	9.99	-28
Total, 15 to 44 years	10,398	15,940	79.9	58.0	62.4	28.1	5.74	6.46	-11
45 to 54 years	1,619	2,940	12.4	10.7	15.0	18.5	8.85	19.27	-54
55 to 64 years	574	2,092	4.4	7.7	14.6	21.8	24.39	38.08	-36
65 years and over	138	1,468	1.1	5.4	7.0	31.6	48.31	78.79	-39
Total, 10 years and over	13,010	27,325	100.0	100.0	100.0	100.0	7.15	13.38	-46
FEMALES.									
10 to 14 years	232	5,161	1.9	18.6	.3	2.4	1.44	2.00	-28
15 to 19 years	2,987	3,038	24.6	9.1	14.7	2.0	4.91	2.85	72
20 to 24 years	3,052	3,037	25.1	9.1	17.4	2.2	5.68	3.07	85
25 to 29 years	1,914	3,518	15.8	10.6	14.7	4.5	7.66	4.69	63
30 to 34 years	1,357	3,196	11.2	9.7	18.4	5.4	11.30	7.09	59
35 to 39 years	1,087	2,993	8.5	9.0	12.0	4.2	11.57	5.90	96
40 to 44 years	709	2,946	5.8	8.6	10.4	5.1	14.57	7.61	92
Total, 15 to 44 years	11,046	18,627	91.0	66.1	84.6	23.4	7.63	5.21	44
45 to 54 years	682	4,004	5.6	13.5	10.0	14.8	14.68	14.04	4
55 to 64 years	161	2,304	1.3	8.7	4.4	24.5	26.92	38.70	-35
65 years and over	17	2,027	.2	6.1	.7	34.9	39.22	73.01	-46
Total, 10 years and over	12,148	33,183	100.0	100.0	100.0	100.0	8.20	12.77	-36

This table brings out very clearly the massing of the female operatives in the earlier age groups, where the death rates are normally low. Practically 50 per cent of the female operatives are found in the two groups aged 15 to 19 and 20 to 24 years, while only 18.2 per cent of the female nonoperatives are found in these age groups. This relative usefulness of the operatives greatly increases the impressiveness of their high death rate. Of the female operative deaths 32.1 per cent occur between 15 and 25, during which period only 4.2 per cent of the female nonoperative deaths occur.

Comparing the death rates per 1,000 of operatives and nonoperatives it will be seen that the greatest excess among the males, 37.1 per cent, is in the 15 to 19 year group. The importance of this group is indicated by the fact that it contains over one-sixth of all the male operatives. In the almost equally important group, 20 to 24 years, the excess is only 18.4 per cent, while in the other groups—except 10 to 14 years, which is not important for operatives—the excess in death rate is either on the side of the nonoperatives or is not important.

Comparing the death rates per 1,000 of female operatives and nonoperatives, the greatest excess, 96.1 per cent, appears in the 35 to 39 year group, which contains approximately one-twelfth of all the female operatives. In the age group 40 to 44 the excess in the operative rate is 91.5 per cent, but the group is numerically less important, constituting only 5.8 per cent of all female operatives. In the most important age group, 20 to 24, which contains 25.1 per cent of all female operatives, the excess in the operative death rate is 85 per cent, and in the next most important group, 15 to 19 years, containing 24.6 per cent of the female operatives, the excess is 72.3 per cent.

The exceedingly large excess in the death rates of operatives over nonoperatives among the young workers (15 to 19 years) must be considered especially significant, for these groups contain large numbers and represent a comparison of boys and girls who have been employed an average of two or three years with boys and girls of equal age, probably the greater part of whom had not been employed as wage earners.

Among male operatives the massing in the lower age groups is by no means so pronounced as among female operatives. One-third of the male operatives, however, as against about one-fifth of the nonoperatives, are found between 15 and 25, and 22.2 per cent of the operative deaths, as compared with 5.4 per cent of the nonoperative, occur between these ages.

RELATIVE MORTALITY OF OPERATIVES AND NONOPERATIVES FROM TUBERCULOSIS.

The varying importance of tuberculosis as a cause of death among males and females, operatives and nonoperatives, and in the various age groups is readily seen when a comparison is made of the per cent of total deaths due to that cause. Such a comparison is made in the following table, the five-year age groups being used as in the table which has preceded.

TOTAL DEATHS FROM ALL CAUSES, AND NUMBER AND PER CENT OF DEATHS DUE TO TUBERCULOSIS FOR OPERATIVES AND NONOPERATIVES, BY SEX AND AGE GROUPS, FALL RIVER, 1905 TO 1907.

Age group.	Operatives.			Nonoperatives		
	Total deaths, all causes.	Deaths from tuberculosis.		Total deaths, all causes.	Deaths from tuberculosis.	
		Number.	Per cent.		Number.	Per cent.
MALES.						
10 to 14 years	3			33		
15 to 19 years	32	11	34.4	24	9	37.5
20 to 24 years	32	16	50.0	35	11	31.4
25 to 29 years	21	8	38.1	40	13	32.5
30 to 34 years	41	21	51.2	68	27	39.7
35 to 39 years	28	14	53.8	82	28	34.2
40 to 44 years	27	12	44.4	59	9	15.3
Total, 15 to 44 years	179	82	45.8	308	97	31.5
45 to 54 years	43	7	16.3	170	28	16.5
55 to 64 years	42	5	11.9	239	15	6.2
65 years and over	20			347	12	3.5
Total, 10 years and over	287	94	32.8	1,097	172	15.9
FEMALES.						
10 to 14 years	1			31	8	25.8
15 to 19 years	44	20	45.5	26	10	38.5
20 to 24 years	52	23	44.2	29	9	32.1
25 to 29 years	44	26	59.1	57	18	31.6
30 to 34 years	40	20	47.5	68	21	30.9
35 to 39 years	36	12	33.3	53	9	17.0
40 to 44 years	31	5	16.1	65	2	3.1
Total, 15 to 44 years	247	106	41.9	297	69	23.2
45 to 54 years	30	6	20.0	188	17	9.0
55 to 64 years	13			311	10	3.2
65 years and over	2			444	4	.9
Total, 10 years and over	239	112	37.5	1,271	108	8.5

The foregoing table shows not only the greater importance of tuberculosis among operatives, but the relative diminution in its importance as a cause of death in the higher age groups where other causes are increasingly destructive. Both male and female operatives show a greater relative mortality from tuberculosis than nonoperatives, but the difference is much greater among females than among males. Among female nonoperatives it will be noted that the highest proportions of tuberculous deaths are found in the age groups 15 to 19 and 20 to 24, although such deaths are fewer than in the next two groups, the reason being, of course, that other deaths are numerous at these early ages. Among the female operatives of the same ages, deaths from other causes are much more numerous, and consequently, though the tuberculous deaths are twice or more than twice as numerous as among nonoperatives, the percentage they form of the total deaths is by no means proportionately greater.[1]

[1] Vol. XIV, Causes of Death Among Woman and Child Cotton Mill Operatives, pp. 70 71

RELATIVE DEATH RATES FROM TUBERCULOSIS OF OPERATIVES AND NONOPERATIVES.

If instead of comparing the death rate from all causes the death rate from tuberculosis alone be considered, the excess of the female operative over the female nonoperative rate is enormous. For the whole group aged 15 to 44 years the operative excess in Fall River was 160 per cent, and in the component five-year age groups the operative excess ranged from 103 per cent among those aged 15 to 19 years to 922 per cent among those aged 40 to 44 years. The following table presents briefly the situation in regard to operative and nonoperative death rates in Fall River during the period covered:

COMPARISON OF DEATH RATES PER 1,000 POPULATION 15 TO 44 YEARS OF OPERATIVES AND NONOPERATIVES, BY SEX AND AGE GROUPS, FALL RIVER, 1905 TO 1907.

Age group.	Tuberculous.			Nontuberculous.			All causes.		
	Death rate per 1,000.		Per cent of excess of operative over nonoperative death rate.	Death rate per 1,000.		Per cent of excess of operative over nonoperative death rate.	Death rate per 1,000.		Per cent of excess of operative over nonoperative death rate.
	Operatives.	Nonoperatives.		Operatives.	Nonoperatives.		Operatives.	Nonoperatives.	
MALES.									
15 to 19	1.60	0.93	72	3.04	1.55	96	4.64	2.48	87
20 to 24	2.61	1.39	88	2.61	3.02	−14	5.22	4.41	18
25 to 29	1.57	1.45	8	2.56	3.02	−15	4.13	4.47	− 8
30 to 34	4.46	3.36	33	4.24	5.10	−17	8.70	8.46	3
35 to 39	3.05	3.99	−24	2.62	7.70	−66	5.67	11.69	−52
40 to 44	3.20	1.52	111	4.00	8.47	−53	7.20	9.99	−28
Total, 15 to 44	2.63	2.04	29	3.11	4.44	−30	5.74	6.48	−11
FEMALES.									
15 to 19	2.23	1.10	103	2.68	1.75	53	4.91	2.85	72
20 to 24	2.51	.99	154	3.17	2.08	52	5.68	3.07	85
25 to 29	4.53	1.71	165	3.13	3.69	−15	7.66	5.40	42
30 to 34	4.91	2.19	124	6.39	4.90	30	11.30	7.09	59
35 to 39	3.86	1.00	286	7.71	4.90	57	11.57	5.90	96
40 to 44	2.35	.23	922	12.22	7.38	66	14.57	7.61	91
Total, 15 to 44	3.20	1.23	160	4.43	4.08	9	7.63	5.31	44

The above table shows the variations in the death rates for the 5-year groups which are hidden when the whole period of 30 years is considered as a unit. This effect is most liable to lead to misinterpretations in the death rates for male operatives and nonoperatives from all causes. In three of the 5-year groups the operative exceeds the nonoperative rate, while in the other three the situation is reversed; the rate for the whole period is greater among nonoperatives than among operatives.

But when the causes of deaths are considered among the males, it is seen that the death rate per 1,000 from tuberculosis among operatives exceeds that among the nonoperatives, save in one age group, 35 to 39. The excess was most marked in the age group 40 to 44 and

in the younger age groups, 20 to 24 and 15 to 19. Quite the opposite is shown in a comparison of death rates from nontuberculous causes, here, save in one age group, 15 to 19 years, the excess being uniformly on the side of the nonoperatives.

For the female operatives the death rate per 1,000 is in all groups and classes save one (nontuberculous deaths, 25 to 29 years) largely in excess of that for female nonoperatives. The rates, however, from tuberculosis show an extraordinary excess. Thus, in the important age groups, 15 to 19, 20 to 24, and 25 to 29, the excess in the tuberculous rate for female operatives is, respectively, 102.7, 153.5, and 164.9. The rates from nontuberculous causes are in the most important age groups, 15 to 19 and 20 to 24, over 50 per cent in excess of those for nonoperatives. In considering the period 15 to 44 years as a whole, the massing of operatives in the youngest groups, where death rates would normally be low, must always be borne in mind. Were operatives, and especially female operatives, equally distributed among the age groups, the excess of the operative over the nonoperative death rate among females would be even greater than it is now and the nonoperative excess among males might disappear altogether.[1]

GROUNDS FOR BELIEVING OPERATIVE WORK INJURIOUS TO FEMALES.

In view of the facts (1) that in the general population the female death rate is lower than the male; (2) that among operatives the female death rate is higher than the male; (3) that the death rate of female operatives is uniformly higher than that of female nonoperatives; and (4) that this difference becomes enormous in the case of death rates from tuberculosis, the conclusion seems justified that operative work is injurious to females, rendering them especially susceptible to tuberculosis.

Whether the harmful effects of operative work are greater than those of other industrial employments, and whether they inhere in cotton textile work as a whole or are due to certain occupations carried on within the mills, are questions for further investigations to answer. This has established the fact of the high mortality among female cotton operatives and of their special susceptibility to tuberculosis.[2]

MORTALITY BY RACE.

The population of the three cities studied was classified in five race groups: American, English, French Canadian, Irish, and other races. A comparison of the proportion which each of these groups furnished of the population and of the deaths showed that the Irish everywhere and for each period furnished a much larger percentage of the deaths than they did of the population, and this disproportion

[1] Vol. XIV, Causes of Death Among Woman and Child Cotton-Mill Operatives, pp 72, 73.
[2] Idem, p. 22.

was especially marked in the deaths from tuberculosis. The American and the English nowhere reached the proportion of deaths which their representation in the population would justify, but came nearest to it in the deaths from nontuberculous causes. The French Canadians and the "other races" both kept very near their population quota of deaths, the French rising a little above and the "other races" falling a little below it. The relatively large number of Irish deaths can not be ascribed to any one age, sex, or occupation group, but must be considered characteristic of the race as a whole.

Americans exhibited less susceptibility to tuberculosis than any of the other races, showing only one-half the average mortality of all the races from this cause; then come the English with only two-thirds of the average mortality from tuberculosis; then the group of "other races," among whom it approaches very closely the average, but falls a trifle below; then the French Canadians, among whom also it comes very close to the average, but rises a trifle above it; and last of all the Irish, among whom it rises to almost double the rate for all races combined.

RELATIVE IMPORTANCE OF DIFFERENT CAUSES OF DEATH.

By far the most important cause of death in the age group 15 to 44 was tuberculosis, which was responsible for 1 death out of every 3, while the next most prevalent cause "Respiratory diseases other than tuberculosis," accounted for only 1 death out of every 8. Among operative deaths approximately 1 out of 2 were due to tuberculosis, and among nonoperative deaths approximately 1 out of 4. Tuberculosis and the other respiratory diseases combined are responsible for nearly half the total deaths in this age group; among operatives they account for 3 out of every 5 deaths; and among nonoperatives for 2 out of 5 deaths.

Next in importance to the respiratory diseases as a cause of death comes for males accident or violence, which accounts for 1 in every 10 male deaths, and for females parturition, which accounts for precisely the same proportion of female deaths, 1 in 10.

This by no means fairly represents the hazards of childbirth, since not all females within these age limits were married, and not all who were married had been parturient. Twenty-four tuberculous deaths had occurred with childbirth as a complication; if these were counted among the deaths from parturition it would make that cause responsible for 1 out of every 7 female deaths in this age group in Fall River; i. e., parturition would rank second only to tuberculosis in importance. As regards race, the Irish, both operatives and nonoperatives, showed a lower proportion of deaths from this cause than prevailed among the non-Irish.[1]

[1] Vol. XIV, Causes of Death Among Woman and Child Cotton-Mill Operatives, p. 87.

Fourth in importance for both sexes comes nephritis, which is responsible for 1 death in every 12. If the matter of race be ignored this proportion is almost uniform throughout the various sex and occupation classes. From the standpoint of race, however, the Irish show a remarkable variation; among them nephritis holds the position held by nontuberculous respiratory diseases among the population in general—that is, it ranks next to tuberculosis in importance as a cause of death. Among the Irish in Fall River during the three years studied it was the officially certified cause of 1 death out of every 7 or 8 (according to the sex and occupation group) which occurred, while among the non-Irish only 1 in every 20 decedents was officially certified as having died from nephritis.

These causes account for well over three-fifths of the total deaths in the 15 to 44 age group, the remaining deaths being due to a variety of diseases, no one of which conspicuously exceeded the others in harmfulness. The two important points established by the study of this age group are the excess in the death rates of operatives as compared with nonoperatives, especially in the case of females, and the prominence of tuberculosis as a cause of death in this period which should be of full physical vigor and which includes the years of greatest industrial importance.

MORTALITY IN THE POPULATION AGED 10 YEARS AND OVER.

In this section a careful study is made first of the mortality from tuberculosis and then of mortality from nontuberculous causes, and a number of possibly contributory causes of death are considered.

The study of tuberculosis shows much the same results as the same study for the age group 15 to 44. In both groups tuberculosis is the most important single cause of death and in both it is far more destructive to operatives than to nonoperatives.

The fact that operatives almost without exception in each locality and in the various age, sex, and race groups show such an undue proportion of deaths from tuberculosis is almost conclusive proof of a causal connection between operative work and the disease. The coincidence between work in the cotton mills and a death rate from tuberculosis higher than that of a corresponding class of nonoperatives would not be found in so many and such diverse groups were it a mere coincidence. It seems hardly open to question that operative work predisposes to tuberculosis and that its effect in this direction is greater among females than among males.[1]

[1] Vol XIV, Causes of Death Among Woman and Child Cotton Mill Operatives, p 134

SUGGESTED EXPLANATIONS OF HIGH DEATH RATE OF OPERATIVES FROM TUBERCULOSIS.

Several possible explanations of the high death rate of operatives from tuberculosis are considered, such as the migratory habits of operatives which, it is sometimes claimed, bring many already stricken with the disease into the leading cotton-mill towns to die and thus increase the death rates by the addition of those who should be classed as nonresidents; the number of foreigners in the mills and their undue susceptibility to tuberculosis; and the overlarge families of cotton operatives, which being out of all proportion to the father's earnings, are necessarily undernourished and therefore prone to disease.

As to the first theory, the facts were altogether against it. The closest inquiry brought to light only three cases among the tuberculous operative decedents in which the operative had lived in the given city for so short a period before his death that it would be reasonable to suppose he had developed the disease elsewhere. On the other hand, it was a common matter to be told of former operatives who having reached an advanced stage of tuberculosis had gone back to their childhood home to die, so that apparently the operative death rate of the cities studied is lower, not higher, than the facts would warrant. No evidence could be found that the foreign mill workers were markedly more susceptible to tuberculosis than the native born. It was even less possible to find any support for the idea that the overlarge families of the operatives were responsible for the situation.

Considering first the males, it appears that only a little over half of the operative decedents had ever had children and that those who had become fathers had averaged only a trifle over four children apiece. Moreover, of these four children on an average one had died in each family, so that the average number of living children per decedent was only three. These averages are not only small, considered by themselves, but are smaller than the corresponding averages for tuberculous nonoperatives. * * * Turning to the female operative decedents, it appears that less than half of them had ever been mothers, and that those who had been averaged only 3.1 children apiece. Moreover, on an average, one child in each of these families had died, leaving on an average less than two surviving children for each operative decedent mother. Here, as among the males, there is no justification for ascribing the high operative death rate to the effect of large families.[1]

A study was made of the length of time during which tuberculous decedents were known to have suffered from the disease. Over a fourth (27.6 per cent) of the male and nearly a third (30.9 per cent) of the female tuberculous decedents were admitted by their relatives

[1] Vol. XIV, Causes of Death Among Woman and Child Cotton-Mill Operatives, pp. 151, 152.

to have had tuberculosis for two years or more before their death. This means that a considerable number must have kept on at their work in the mills for a year or more after the disease was established. Since tuberculosis is eminently a communicable disease, and since few sufferers from it take the precautions which render their presence safe to others, it is highly probable that many of these tuberculous decedents had been persistent sources of infection for the other workers within the same mill room.

A tentative effort was made to determine whether the high operative mortality from tuberculosis could be attributed to any special occupation within the mills, but the results were rather unsatisfactory. The female card-room workers showed a higher death rate from tuberculosis than that which prevailed among female operatives generally, but the data available concerning the age and race distribution of the operative population were not sufficient to show whether this was an accidental or a causal connection. It is worth noticing, however, that the card room is the dustiest of the rooms in which women are employed, and is usually also the darkest. A further intensive study of the death hazards of the particular occupations is now being made.

CONCLUSION.

A number of other possible factors in the death rate are considered, such as intemperance, the special hazard of married women, the effect of early marriage, effect of tuberculous kindred and relatives, sanitary condition of the decedent's dwelling place, and the like, but a lack of sufficient data respecting the population made it impossible to reach satisfactory conclusions. The report may be taken as having definitely established the higher mortality of cotton-mill operatives as compared with nonoperatives, especially in the case of women, and also as having demonstrated that operatives are peculiarly susceptible to tuberculosis. Also, it shows the urgent need for further investigations to solve many problems which the present investigation has brought to light.

CHAPTER XV.—THE RELATION BETWEEN OCCUPATION AND CRIMINALITY AMONG WOMEN.

This study was undertaken for the purpose of discovering whether the widening of the industrial sphere of women, which became so noticeable in the last quarter of the nineteenth century and is still in progress, has had any discoverable effect in developing antisocial tendencies among them, and if so, whether such increase could be ascribed to any specific occupations or must be assigned to the general fact of their transfer from their traditional pursuits, mainly carried on within the home, to the field of competitive industry outside. It consists of two parts—a study of something over 3,000 women who had violated the law and were found under sentence during the period covered and a general discussion of immorality among women.

STUDY OF FEMALE OFFENDERS.

The study of the first part was confined to regions in which good official records gave a basis of facts concerning the offenders, and to this minimum of information was added what could be obtained by investigation among those familiar with each woman's history. Those studied were distributed as follows:

Massachusetts	923
New York	840
New Jersey	784
Ohio	269
Indiana	209
Illinois	144
Total	3,229

These figures show nothing as to the relative number of women offenders in the various States, as they represent only those for whom it was possible to secure definite information as to industrial status. In Massachusetts only those women under sentence at the time of the visit of investigation were taken, the number thus secured amounting to about one-third of the total number sentenced annually. Elsewhere the inquiry took in those who had been under sentence during the year preceding the visit of investigation. State, county, and municipal institutions alike were visited.

AGE, EDUCATION, AND OFFENSES.

Although the report deals mainly with the industrial distribution of the women considered, other points are included. The age grouping differs from that which is regarded as typical in that the proportion of cases above and below 30 years old is almost identical (50.5 per cent under 30, 49.5 per cent 30 or over), while ordinarily the period from 15 to 30 years is looked upon as preeminently the criminal age. When, however, the women who were sentenced for intoxication are omitted, the remaining group shows 62.8 per cent under 30 to 37.2 per cent 30 years or over, an alteration of the former proportion which shows very strikingly that intemperance, at least to the degree which leads to arrest, is distinctly a fault of the older women. As the places studied included several in which intemperance is looked upon with marked disfavor and very generally punished, it is easy to see why the age level for the whole group is high.

The women studied were for the most part misdemeanants rather than criminals. Their distribution by offense stood as follows:

NUMBER AND PER CENT OF DELINQUENTS GUILTY OF SPECIFIED OFFENSES AMONG WOMEN STUDIED.

Offense.	Number.	Per cent.
Minor offenses against property	461	14.3
Serious offenses against property	140	4.3
Minor offenses against chastity	553	17.1
Serious offenses against chastity	79	2.4
Offenses against the person	147	4.6
Miscellaneous offenses	138	4.3
Incorrigibility	199	6.2
Intoxication	973	30.1
Disorderly conduct	539	16.7
Total	3,229	100.0

For the most part the women had but little education. Four-fifths claimed the ability to read and write, but in many cases the claim could hardly have been substantiated; few went further than this. Nearly two-fifths of the whole group (38.9 per cent) were single, the proportion varying considerably according to the offense. The unmarried showed an excess among those sentenced for minor offenses against chastity and for incorrigibility (54.79 per cent in the first, 95.48 per cent in the second case being single), but elsewhere the married women lead. The racial distribution of the offenders is not touched upon, owing to the impossibility of securing data as to the racial distribution of the general population, without which no reliable conclusions could be drawn from these figures.

OCCUPATIONS.

The occupations of the offenders, which are taken up in detail, represent a wide range, running through the traditional pursuits of women and the newer occupations in great variety. Something

over one-fourth (28.31 per cent) came directly from their own homes, having had no outside pursuits. Over one-half (52.40 per cent) came from such traditional pursuits of women as domestic service, laundry work, and the like.

PROPORTIONAL REPRESENTATION OF OCCUPATIONS AMONG OFFENDERS.

To test the relative importance of the newer occupations as feeders for the stream of female offenders, all those not known to have a gainful occupation were omitted from consideration, the remainder grouped according to their callings, and the results compared with the census figures showing the occupational distribution of women at work. This gives the following table:

NUMBER AND PER CENT OF DELINQUENT WOMEN FROM CERTAIN PURSUITS, AND PERCENTAGE OF TOTAL WOMEN WAGE EARNERS ENGAGED IN SAME PURSUITS.

Occupation.	Delinquents.		Per cent of total women wage earners 16 years and over engaged in occupation.[1]
	Number.	Per cent.	
Domestic and personal service:			
Boarding-house keepers	24	1.22	1.2
Hairdressers and manicurists	3	.15	.....
Laundresses	99	5.05	6.8
Nurses and midwives	15	.76	2.2
Servants and waiters	1,380	70.34	34.1
Total in domestic and personal service	1,521	77.52	40.4
Manufacturing and mechanical pursuits	327	16.67	24.8
Miscellaneous[2]	7	.36	.....
Professional	13	.66	8.9
Trade and transportation	65	3.31	10.0
Unknown	29	1.48	.....
Total	1,962	100.00	.....

[1] Twelfth Census, Statistics of Women at Work, 1900, p. 32.
[2] These workers were so scattered that comparison with the census figures is difficult.

SMALL REPRESENTATION FROM NEWER PURSUITS.

To avoid any error which might arise from the fact that the census figures are for the Union as a whole, while the offenders were taken only from certain States, similar comparisons are made for limited areas—the cities of Cleveland, Paterson, and Rochester, and the State of Massachusetts. The results of these various comparisons do not differ materially from those of the first. Very generally it appears that—

By far the greater number of women gainfully employed who had reached the prisons and penitentiaries came there from the pursuits which have for generations been recognized as peculiarly women's work, and that the newer industries opened to them in the last thirty

years furnish very much less than their proportion. Wherever the occupational distribution of these offenders is studied, whether as an undivided group, in single cities under varying industrial conditions, or in one of the largest manufacturing States of the Union, the general situation is found to be the same; the wage-earning domestic pursuits give far more, the manufacturing and commercial pursuits far less, than their proportion of offenders. From place to place the relative proportions vary slightly, but the fact remains unchanged.[1]

Two possible criticisms of the validity of these results are considered: First, that women from better positions, wishing to hide the fact of their fall, may call themselves servants when they really come from some other pursuit, and, second, that women from other kinds of work as they lose on their downward way the self-control and outward respectability demanded in most of the newer occupations may fall back into domestic service, thus clouding it with the failures due to some other vocation.

As to the first point, no such tendency was discoverable, either in the experience of the investigators or in the detailed records of something over 600 women for whom the full industrial history was secured. As to the second, a movement between the great industrial groups was clearly indicated in these same detailed histories, 27 women who began in manufacturing and mechanical pursuits and 4 who began in trades and transportation being found, at the time of their latest arrest, in domestic and personal service. But meanwhile a similar movement away from this latter occupation group was taking place; 89 women who had begun their industrial life there had left it before the time of their latest arrest, and the group in which 247 began showed but 212 members when these facts were collected. The general movement for all these women was not so much from one industry group to another among the gainful occupations as it was from gainful to nongainful pursuits. The extent of this movement is indicated by the fact that while 74 per cent of these women had at some time been gainfully employed, but 53.7 per cent of them were so employed at the time of their latest arrest. There seems no reason, therefore, to suppose that the figures showing the number of offenders from domestic and personal service have been unduly weighted.

Statistically it may be considered certain that if there has been any proportionate increase in the amount of criminality among women since the opening up of these newer occupations, it is not due to the occupations. The prison population is not recruited from the ranks of the saleswomen, the clerks and stenographers, the packers and shippers, and telegraph and telephone operators who have increased so rapidly within the past few decades.[2]

[1] Vol. XV, Relation Between Occupation and Criminality of Women, p. 41.
[2] Idem, p. 53.

APPARENT DECREASE IN NUMBER OF FEMALE OFFENDERS.

But there is considerable reason for believing that there has been no such increase, but that, on the contrary, women are becoming more, not less, law-abiding. The testimony of the prison officials consulted during the investigation was unanimous on this point: all declared that instead of increasing, criminality among women is becoming less common, and that the number of female prisoners has shown a marked decrease within the last 20 to 30 years. The United States census showed the same thing,[1] and wherever reliable statistics could be obtained a diminution in the number of female prisoners was found.

The objection that this decrease may be due to using, instead of imprisonment, other methods of punishment, such as fines, probation, etc., can not be fully answered, but some test of its validity may be made for Massachusetts, which publishes very full data concerning arrests as well as sentences. From these it appears that the number of women arrested in that State increased from 9,646 in 1896 to 10,457 in 1907, the last year for which the statistics were available at the time of the investigation. Meanwhile the female population aged 14 years[2] and over of the State increased from 975,578 in 1895 to 1,168,800 in 1905. In 1896 the number of arrests formed a ratio of 0.988 to the female population; in 1907 it was 0.894, showing that the number of arrests had not kept pace with the growth of the population. As the number of arrests is not affected by changes in the method of punishing those found guilty, this seems to indicate pretty clearly that in Massachusetts at least the relative number of female offenders has been actually as well as apparently diminishing.

RELATION BETWEEN OCCUPATIONS AND OFFENDERS.

But it does not follow that because the newer occupations can not be held responsible for any increase of antisocial tendencies among women no connection exists between occupation and such tendencies. The investigation seems to show that there is such a connection, but that it lies back of the industrial experience itself, in the qualities which lead a woman into one kind of work rather than another. A study of the women found in confinement shows that while accidental and occasional offenders may come from any class, and while a few professional criminals are bright and forceful women, the great majority were incapable and inefficient, "low-grade women who are in the main uneducated mentally and untrained in-

[1] Special Report, Prisoners and Juvenile Delinquents in Institutions, 1904, p. 16.

[2] The arrests given above are for women over 16.

dustrially and undeveloped morally." They have little self-control, little power of sustained application, and no idea of consistent, purposeful effort toward a desired end. For the most part they would be quite incapable of securing a position in a factory of the better class, or an office or store, or of holding such a position if they once got it. They are found in the lower grades of factory work and in the ranks of domestic and personal service simply because these occupations afford an opening for the poorest kinds of unskilled work. Some kinds of domestic service, of course, demand a high degree of both skill and training, but in general it is not from these that the offender comes.

They come from the ranks of domestic and personal service and from housekeeping, not because these occupations necessarily lead women into conflict with the laws, but because they are the chief pursuits open to the kind of women likely to come into conflict with the laws, and also because these occupations have in themselves but few restraining influences for such women.

The newer occupations, on the other hand, show far less than their proportion of female offenders, because they attract the better grade of workers and because they exercise upon these women several restraining influences. * * * The relation between occupation and lawlessness is not directly causal; it lies deeper in the demand a given occupation makes for intelligence and character in its workers. The newer occupations make such demand, and hence the small proportion of offenders from their ranks. In the main, women do not offend against the laws because they are engaged in domestic and personal service, but the offenders who have been engaged in such work are the kind who would be likely to offend wherever they might be placed; they do not refrain from lawbreaking because they are engaged in commerce or transportation, but the women capable of following such occupations are the kind who are least likely to break the law.[1]

IMMORALITY AND OCCUPATION.

No systematic investigation of immorality was attempted, but it is so closely connected with lawlessness that considerable information concerning it was gained incidentally and this was later supplemented by an inquiry among rescue homes and refuges, rescue workers, and social workers of whatever kind who devote themselves to this particular subject. The special purpose of this inquiry was to see if any occupational influences could be traced and to what extent low wages were a factor in forcing girls into discreditable courses. Out of the wide variety of facts and opinions collected, two results stood out conspicuously:

I. Not one person consulted had given occupational influences as a leading cause of immorality, and only two laid any particular stress on them as subsidiary causes.

[1] Vol. XV, Relation Between Occupation and Criminality of Women, pp. 75, 76.

II. Not one worker assigned poverty or low wages as a direct and immediate cause of immorality. It was agreed that indirectly their influence is great, but in the whole inquiry only five cases were found in which the workers reporting them believed that the women had been driven into wrongdoing by want.[1]

It was difficult to obtain anything more than estimates of the occupational distribution of the women who went wrong, as for the most part the records did not give any information on this point. Out of 25 homes and rescue agencies visited, the superintendents in 10 cases said they received the largest number of inmates directly from their own homes, in 14 cases that most of them came from domestic service, and in one case that the majority were from the factories.

One home, situated on the lower East Side of New York, gave the occupations of the women admitted during the years 1907 and 1908. As this home did not confine its aid to women who had gone wrong for the first time, the number coming directly from their own homes was comparatively small. The occupational distribution of the 826 women received was as follows:

Items.	Number.	Per cent.
Having no gainful occupation	73	22.
In domestic or personal service	187	57.4
In manufacturing and mechanical pursuits	41	12.6
In trade and transportation	23	7.0
In professional pursuits	2	.6
Total	326	100.0

MORALLY DANGEROUS OCCUPATIONS.

Five occupations were assigned as seeming to be specially dangerous from the standpoint of morals, the judgment being based on the number of women from their ranks known to have gone wrong—domestic service, the work of hotel or restaurant waitresses, the low-grade factory trades, trained nursing, and the low-grade stenographic positions filled by girls just out of school and too immature and untrained to be really qualified for self-guidance. While each of these pursuits had some special dangers of its own, the root of the trouble seemed to be, as in the case of the offenders brought into court, not so much in the work as in the kind of women who would naturally take up that sort of work. To this general rule trained nursing offers an apparent exception, for which two reasons suggest themselves: First, while the work is severe, the nurse can easily obtain liquor and drugs which another worker might find difficulty in getting hold of, so she is in special danger of forming liquor or drug habits, which, once established, are very apt to lead to other forms of wrongdoing. And as a second cause, certain advantages

[1] Vol. XV, Relations Between Occupation and Criminality of Women, p. 82.

the occupation offers for the unscrupulous have attracted to it some women of highly undesirable character.

A considerable portion of the latter part of the report is devoted to a discussion of the different classes of women who are apt to be grouped together rather sweepingly as "fallen," and to a consideration of the frequent assumption that shop girls and saleswomen are especially apt to go wrong. For this assumption the report shows no foundation, but three possible causes are suggested for it.

First, a belief that women can not live honestly on the wages they receive; second, the fact that standards of decorum differ among different classes and that working girls sometimes indulge in behavior which among people bred in traditions of polite reserve would indicate immoral tendencies; third, a blind acceptance of a traditional idea—in other words, prejudice pure and simple.

CHAPTER XVI.—FAMILY BUDGETS OF TYPICAL COTTON-MILL WORKERS.

PURPOSE OF REPORT.

This report gives the results of a study of the incomes and expenditures for one year of 21 mill families in the South and 14 in Fall River. In addition the cost of both a minimum and a fair standard of living in the selected places was computed, and a comparison made between the ascertained incomes of the families under consideration and these two standards. Special stress is laid on the fact that these standards were actual, not theoretic. The effort was not to decide abstractly what amount a family must have or what it ought to have, but what the income it actually had meant according to the standards of its particular habitat, in terms of living.

The attempt is * * * to determine what according to the customs prevailing in the communities selected for study is a fair standard of living and what according to the same measure is the minimum standard upon which families are living and apparently maintaining physical efficiency. These standards, it should be emphasized, are the standards found to be actually prevailing among cotton-mill families of the several communities studied, and are not standards fixed by the judgment either of the investigators or of the Bureau of Labor.[1]

LOCALITIES AND FAMILIES STUDIED.

In order that the families studied in the South might represent the differing conditions in different communities, they were studied in three localities: Atlanta, Ga., a large city where the cotton industry is one among many varied industries; Greensboro, N. C., a small city where the cotton industry is predominant; and a small country mill about four miles from Burlington, N. C. In the North limitations of time made it necessary to confine the study to Fall River.

The data concerning the Southern families is on the whole both comprehensive and accurate. All the wage earners of each family worked in the same mill, and by the courtesy of the mill owners it was possible to get the exact weekly earnings of each wage earner for

[1] Vol. XVI, Family Budgets of Typical Cotton Mill Workers, p. 9.

each week of the year. Generally, the families lived in company houses, so that the rent was easily learned, and did their trading at a company store, or at a store almost wholly dependent on a mill village. Stores of both kinds cooperated in the investigation, allowing the agents conducting the investigation to copy from their books the accounts of the families studied.

In Fall River it was not possible to obtain as complete data. In some cases the earnings of one or more members of a family had to be estimated, for the name of the worker could not be found on the pay roll. (Of the families studied, only four belonged to English-speaking races, and the foreign names were frequently spelled with such freedom as to be quite unrecognizable.) There were no company stores, and purchases were usually made for cash, so that accounts could rarely be obtained. The workers spent more on incidentals which are easily forgotten. Consequently, while the incomes were usually secured with a reasonable degree of accuracy, the expenditures were often incomplete.

The results of this intensive study were confirmed by the results of the more general investigation described in Volume I of this report, in which 1,567 families of cotton-mill workers in the South and 438 similar families in Massachusetts were visited and inquiries made in regard to their domestic economy. In addition, the exact earnings were secured of 75 cotton-mill families in North Carolina, South Carolina, and Georgia, and the composition of the families was learned. With these results thus secured as a background, the facts learned in the intensive investigation take on an importance and significance which would have been impossible for an isolated study of no greater extent than this.

COST OF LIVING IN LOCALITIES SELECTED.

The budgets of these particular families are of importance chiefly as they afford a basis for determining the cost of living. Considering the standards and the prices prevailing in the localities studied, the conclusion is reached that in the southern communities the minimum standard for a typical family, i. e., a family consisting of father, mother, and three children ranging from 10 to 4 years old, demands an annual income of $408.26, while the cost of a fair standard for the same family would be $600.74. In Fall River the cost of a minimum standard for a similar family would be $484.41, while a fair standard would cost for English, Irish, and French Canadian families $731.64, and for Portuguese, Polish, and Italian families $690.60. The difference in cost of these two standards is wholly in the item of rent, the

three races with the lower standard being satisfied with accommodations which the others are unwilling to accept unless forced to do so by extreme poverty. The cost of the various items making up the minimum and fair standards is worked out for individuals of each sex and of successive ages, so that it is possible to calculate how closely the incomes of the families studied approximate the cost of the two standards.

AVERAGE WEEKLY EARNINGS AND COST OF LIVING.

Taking those whose membership was fairly steady throughout the year, so that average weekly earnings and weekly expenditures can be easily reckoned, it appears that in 2 of the 16 southern families whose earnings were reported for each week of the year the annual income fell below the amount needed for even the minimum standard, in 9 others it fell below the requirements of the fair standard, and in 5 it rose above the latter standard. Among 75 other families whose incomes and composition were learned 15 had incomes below the requirements of the minimum standard, 38 had incomes above the cost of the minimum but below the cost of a fair standard of living, and 22 had incomes above the cost of a fair standard. In Fall River 1 of the 14 families studied had an income below the cost of the minimum standard of living, 9 had incomes above the cost of a minimum but below the cost of a fair standard, and 4 had incomes above the cost of a fair standard. In other words, of the 105 families studied something over one-sixth (17.14 per cent) had annual incomes so small that they could not by any exercise of skill, judgment, and economy maintain themselves in a state of physical efficiency, 53.33 per cent could by care and prudence maintain their efficiency but could not reach a fair standard of living, and only 29.53 per cent could live comfortably according to the standards of their community.

FLUCTUATION OF EARNINGS.

The above statement gives too favorable a picture of the situation, as it states what could have been done had the annual income been received in 52 equal installments, but this was practically never the case. The earnings fluctuated widely from week to week, according to whether or not the workers could and did obtain a full week's work. In the southern mills it was difficult to fix the responsibility for these fluctuations, the mill owners claiming that the employees would not work steadily, while the latter claimed that they could not secure enough work to keep themselves steadily employed. In Fall

River mill owners made no complaint that the employees would not work steadily, but the incomes showed a wider range of variation than in the South. The following figures show the extent of the fluctuation in some cases:

FLUCTUATION OF WEEKLY EARNINGS IN THE CASE OF TYPICAL FAMILIES.

Items.	Family.			
	No. 8.	No. 17.	No. 99.	No. 105.
Weekly cost of minimum standard	$14.32	$7.62	$13.89	$9.49
Weekly cost of fair standard	21.88	10.69	21.32	13.99
Average weekly earnings	11.67	7.95	25.67	11.53
Actual weekly earnings:				
First week	16.69	10.39	27.79	13.44
Second week	15.75	5.69	6.69	7.81
Third week	9.19	4.39	28.34	13.34
Fourth week	15.15	5.69	28.39	5.77
Fifth week	9.69	7.49	12.55	13.63
Sixth week	13.29	10.19	15.69	9.95
Seventh week	9.45	10.79	12.77	3.23
Eighth week	7.70	10.79	16.75	8.13

It will be noticed that in some cases the weekly income, within a period of eight consecutive weeks, ranges from considerably below the amount required for the minimum standard up to or beyond the amount required for the fair standard. The fuller tables of the report, covering 52 weeks, show that the movement is often more gradual. Thus, in the case of family 104 the average weekly income, $13.08, was safely above the requirements of the minimum standard, which for this family cost an average of $12.37. But in the first 22 weeks of the year studied, there were only three occasions, not consecutive, on which the weekly earnings reached or passed the minimum required. For two weeks, not consecutive, there were no earnings, the mills being closed. During the remaining 17 weeks the earnings ranged from $4.34 to $11.10. During the remainder of the year earnings were better, occasionally for periods of four or five weeks at a time rising well above the requirements of the fair standard.

The difficulty of adjusting these incomes to the standard of living that the family would be able to maintain if its income were regular is obvious. Equally obvious are the dangers of extravagance on the one hand and running into debt on the other; for the weekly incomes are as far above as below the average.[1]

NUMBER OF WAGE EARNERS; FAMILY WAGE.

The data concerning the composition of the families and the earnings of each member are of especial interest in connection with the discussion of the standard of living. Among the 21 southern

[1] Vol. XVI, Family Budgets of Typical Cotton-Mill Workers, p. 164.

families studied in detail, five wage earners, two of them in one family, were found who had made enough during the preceding year to support a family consisting of father, mother, and three children under working age according to the requirements of the minimum standard, while among the 14 Fall River families only one such was discovered. Not a single wage earner was found who earned enough to support such a family according to the requirements of a fair standard of living. But cotton-mill families are usually large, and even in these five cases the single earner's wages would not have sufficed to support the actual as opposed to the theoretically normal family. In general a composite wage earned by from two to five or more members was a necessity for the maintenance of even a minimum standard of living.

As a matter of fact, the attempt to maintain a family on the earnings of a single worker was rarely made. Among the 21 southern families only one was found with but a single wage earner, and in this case even though the family was relatively small, having only four children, and though the mother kept two boarders to help out, they were in debt at the end of the year. In Fall River two families had only one wage earner apiece. One of these was the only wage earner who made enough to support the so-called normal family according to the requirements of the minimum standard. But he had four children, instead of only three, and though the wife kept lodgers and they lived very plainly, their expenses exceeded the income by $97.66. In the second case there were only two children and the family were obviously thrifty and economical, but expenses exceeded the father's earnings by $174.90. The character of the family is indicated by the fact that this deficiency was met from the savings of earlier years.

In every other case among the families studied in detail there were from two to six wage earners. Among the 21 southern families 14 took boarders or lodgers to help out the income. In Fall River this method was not popular, only four families resorting to it. Among the 75 families in North and South Carolina and Georgia whose incomes and membership were learned, not one depended on a single wage earner, only 11 had as few as 2, and from this the number ran up to 5 or 6 in a family. Of the 11 families depending on two wage earners, 6 had incomes insufficient to maintain even the minimum standard of living. Evidently if these figures are at all typical the man who can support his family by his own work in a cotton mill is the decided exception. Ordinarily the wife and children must work or the family must suffer.

FAMILIES WITHOUT MALE HEADS.

One effect of the family wage as seen in this study is to diminish the economic importance of the man who theoretically should be the chief support of the family. Among the 21 southern families studied were 8 in which the male head had died or deserted his family or was too old to work or was unwilling to work. Three of these families had annual incomes well above the requirements of the fair standard; three others had incomes above the requirements of the minimum, though not reaching those of the fair standard; and two had incomes below the requirements of the minimum standards. In other words, in this group of families who might reasonably be regarded as economically crippled a larger proportion reached a fair standard of living than was the case in the whole group of 105 families studied in this particular. The percentage who did not earn enough to maintain themselves in physical efficiency was also greater in the smaller group, but it is to be noted that this percentage is due to fathers who could work but would not, and is not the result of any lack of a male head.

Similar results appeared in the other localities studied. In Fall River only two of the families studied were without male heads, and each of these had earned during the preceding year well above the amount required for the maintenance of a fair standard of living. Of the 75 families studied in North and South Carolina and Georgia, 25 were without effective male heads, the fathers having died or deserted or being disabled or unwilling to work. Of these, 36 per cent had an income below the requirements of the minimum standard, 44 per cent passed the minimum, but did not reach the fair standard, and 20 per cent passed the fair standard—an alignment which, while not so favorable as that of the group having fathers at work is by no means so different as might have been expected.

These 75 families show rather clearly how the relation between the number of wage earners and the size of the family affects its economic position. The following figures show the relation of these three factors:

AVERAGE NUMBER IN FAMILY AND AVERAGE NUMBER OF WAGE EARNERS IN FAMILY, ACCORDING TO FAMILY INCOME.

Items.	Average number in family.	Average number wage earners.
15 families having incomes below minimum standard	7.3	3.4
38 families with incomes above minimum but below fair standard	7.4	4.0
22 families with incomes above fair standard	6.8	4.4

CONCLUSIONS.

The study as a whole seems to show, when taken in connection with the larger studies to which it may be considered supplementary, that in the cotton-mill communities studied a certain proportion of the workers did not earn enough to maintain physical efficiency unimpaired; that a considerably larger proportion was unable to compass a fair standard of living; that it was only in exceptional cases that an adult male worker could earn enough to support properly a normal family; and that the employment of wife or children, or both, as wage earners was a necessity. The most generally useful feature of the report is its fixation of the cost of a minimum and of a fair standard of living in the localities studied, according to the ideas and customs prevailing in those localities.

CHAPTER XVII.—HOOKWORM DISEASE AMONG COTTON-MILL OPERATIVES.

PLAN OF REPORT.

This study falls into three main divisions: A report on the number of cases of hookworm disease found in an inspection of 169 establishments or institutions in the South and 26 in New England; a discussion of the reasons for believing that the condition popularly known as cotton-mill anæmia is in reality caused by hookworm infection; and a study of the relative effect of cotton-mill and farm life upon the spread of the disease.

SCOPE AND METHODS OF STUDY.

The field work of the investigation was conducted in eight States—North Carolina, South Carolina, Georgia, Alabama, Mississippi, Massachusetts, Rhode Island, and Connecticut. At the beginning microscopic tests were used to detect the presence of the disease, but it was soon found that owing to the time it required this method was impracticable. The greater part of the investigation, therefore, consisted of inspecting as many workers as possible in the establishments visited, and recording as suspects those who showed the characteristic symptoms of the disease. Whenever it was practicable further investigation was made of these suspects. It was realized that in an inspection of this kind many of the lighter cases would escape detection, but, on the other hand, there was very little chance that any who might be suffering from other diseases would be put down as hookworm cases.

NUMBER OF SUSPECTED CASES FOUND.

The result of the investigation in the New England mills may be dismissed very summarily. No cases of hookworm disease were found, nor were there any indications that the disease existed in those regions. In the Southern States, on the contrary, it was rather generally prevalent. The following table shows for each State the number of mills visited, the number of workers inspected,

and the number and per cent who presented the characteristic features of the disease:

HANDS SEEN AND NUMBER AND PER CENT OF SUSPECTS IN SOUTHERN COTTON MILLS OF CLASS A, BY STATES.

[Class A=Establishments for which record was made of number of employees observed and of hookworm suspects.]

States.	Establishments visited.	Hands seen.	Suspects.	
			Number.	Per cent of hands seen.
North Carolina	17	1,588	337	21.2
South Carolina	18	3,154	240	7.6
Georgia	16	2,125	138	6.4
Alabama	7	962	209	21.7
Mississippi	1	240	90	37.5
Total	59	8,069	1,014	12.56

In addition to the suspects thus found, 743 were discovered in other cotton mills in the same States for which no record was made of the number of employees observed, and 12 others were found in a group of 23 mill hands to whom the microscopic test was applied, giving a total of 1,769 cases observed among cotton-mill workers.

AGE DISTRIBUTION OF SUSPECTS.

The age distribution of the suspected cases showed a marked predominance of the younger workers. In 442 cases in which the exact age was learned the proportions in the different age groups were as follows:

Age group.	Number.	Per cent.
Under 16 years old	226	51.13
16 to 20 years old	109	24.66
Over 20 years	107	24.21
Total	442	100.00

This excess of the younger cases is even more marked if the suspects are considered in relation to the whole age group in which they were found. Of the 2,661 workers examined whose ages were learned, 828 were under 16, and of these 27.2 per cent were suspects; 565 were from 16 to 20 years old, and of these 19.2 per cent were suspects, while of the 1,268 who were over 20 years old only 8.4 per cent were suspects.

Thus it appears that about 1 in every 4 children under 16, about 1 in every 5 hands from 16 to 20, and about 1 in every 12 hands over 20 years of age came within the suspect class.[1]

[1] Vol. XVII, Hookworm Disease Among Cotton-Mill Operatives, p. 18.

Various other investigations are quoted, all showing that the proportion of hookworm cases is greatest among children, less among young people, and least among adults.

Some consideration is given to the probable extent of hookworm disease in cotton-mill villages. The figures already given show that a conservative estimate would place the infected workers in the mills at 16.6 per cent of the wage-earning force. But a mill family invariably comprises some members not in the mills. It has been estimated that for every 100 mill hands employed 134 additional persons come to the mill village.

Thus every 100 hands brought from the farms to the mill villages involve an introduction of the infection contained in 234 average persons of that class; * * * accordingly for every 100 mill hands brought from farms to mills at least 29.4 cases of hookworm disease are imported to the mill village, thus bringing that amount of infection to the mill village, but at the same time reducing the soil pollution for that number of hookworm cases.[1]

COTTON-MILL ANÆMIA AND HOOKWORM DISEASE.

The presence of the so-called "cotton-mill anæmia" in the southern mills is very generally admitted, just as is the presence of the underdeveloped children who are frequently referred to as "typical cotton-mill children." The constant inhalation of the cotton lint, with which the air of the mill is filled, is often advanced as an explanation of both phenomena. The writer of this report believes that both are due to hookworm infection.[2] In support of this contention he offers the following arguments:

1. The presence of the hookworm has been proved by microscopic tests in numerous cases both of so-called cotton-mill anæmia and of underdevelopment.

2. The hookworm is known to produce a profound anæmia in those infected, and if the sufferer is a child, underdevelopment is a common result.

3. If the cotton-mill anæmia were the result of inhaling cotton lint it would inevitably be found among the cotton-mill workers of the North as well as of the South, since both regions use cotton grown in the same States under the same conditions. As a matter of fact, however, both the cotton-mill anæmia and the typical cotton-mill child are practically unknown in the northern mills.

[1] Vol. XVII, Hookworm Disease Among Cotton-Mill Operatives, p. 21.

[2] The well-known prevalence of tuberculosis among cotton-mill workers was not studied or discussed by the writer of this report. Upon this subject see pp. 366 to 369 of this bulletin, and pp. 49–51 of Vol. XIV, Causes of Death Among Women and Child Cotton-Mill Operatives.

The argument, as regards the children especially, is thus summed up:

Given (1) the presence of hookworm disease in not less than one out of every four of the Gulf-Atlantic cotton-mill children, (2) the fact that this disease retards the development, (3) the fact that many hookworm sufferers on the farms are underdeveloped, (4) the fact that many farm families move to the mills, it follows that it is not unreasonable to expect that not an inconsiderable proportion of the underdevelopment noticed among the Gulf-Atlantic cotton-mill children, and usually attributed to "breathing in the lint," should be attributed to hookworm disease. A study of the children in question results, in fact, in confirming this expectation; further, experience shows that, in general, the condition of these children improves, as theory indicates that it should, with their life in the cotton-mill village, after their removal from the soil-polluted farms, a change which results in improving their sanitary environments on an average by about 300 per cent.[1]

RELATIVE EFFECT OF FARM AND COTTON-MILL LIFE UPON SPREAD OF DISEASE.

The discussion of the relative effect of farm and cotton-mill life upon the spread of the hookworm disease is based upon the postulate that it is transmitted by pollution of the soil. The cruder the sanitary arrangements of a given community the greater the likelihood that the disease if once introduced will become prevalent, assuming of course that climatic conditions are not unfavorable to its existence. The character of the soil has something to do with its spread, sandy and loose soils seeming best adapted to its transmission, but the primary cause is a pollution of the soil which could be absolutely avoided by the introduction of modern sewerage systems. Where such a system is clearly impracticable, as in a farming community or small village, the chances of infection could be materially diminished by the introduction of better sanitary arrangements.

With this as a starting point, the writer points out that conditions in this respect are necessarily better in any mill village than on many of the isolated farms from which the workers, especially the mountaineers, come; that an improvement in the habits of the workers follows their introduction to improved conditions; that the position of a mill company as landlord enables it to insist upon regulations which greatly reduce the spread of the disease; that if the companies understood the situation they could practically stamp out the danger of infection in their villages; and that even without this knowledge they have already in the interests of ordinary decency enforced regulations which render the chance of contracting the disease much less in even the most insanitary mill villages than it is in many of the regions from which the workers come.

[1] Vol. XVII, Hookworm Disease Among Cotton-Mill Operatives, p. 36.

NUMBER OF CASES AMONG MILL WORKERS OF FIRST AND OF SECOND GENERATIONS.

If the disease is mainly due to insanitary conditions which are more generally found on the farm than in the mill villages, it would follow that cases of hookworm would be more numerous among workers who came to the mills direct from the farm than among those who grew up in mill villages—the second generation of workers. It was difficult to make this comparison since ordinarily both classes of workers were found in the same mill, but two mills were found which furnished data for a fair comparison of this kind. The following table shows the figures for these two establishments:

DIFFERENCE BETWEEN PER CENTS OF HOOKWORM SUSPECTS IN FIRST AND SECOND GENERATION OF MILL LIFE IN TWO SOUTHERN COTTON MILLS OF CLASS A.

[Class A—Establishments for which record was made of number of employees observed and of hookworm suspects.]

Item.	Per cents of suspects.		Remarks.
	All ages combined.	Under 10 years.	
First generation mill	21.6	43.7	This mill village is practically in the country.
Second generation mill	3.5	5.7	This mill village is practically in the city.
Difference	18.1	38.0	Due to lessened soil pollution.

Thus in one generation the improvement * * * in sanitary conditions has resulted in a tremendous improvement in the results (namely, hookworm infection) of insanitary conditions, for the first generation mill shows over 500 per cent more suspects in all hands, and over 600 more suspects among the children, than does the second generation mill. Incidentally, but having a direct bearing on the question, it may be remarked that the first generation mill is the superior of the two, not only as to its lighting and ventilation, but also as respects the sanitary condition of the mill-house privies examined.[1]

CONCLUSIONS.

The situation in regard to the disease, the writer feels, is hopeful because it is an easily recognizable affection which can be easily and satisfactorily treated in the vast majority of cases, and which can be easily prevented by the simple means of a properly constructed, properly maintained, and properly used sanitary privy.

Two lines of attack are indicated: First and most important is the matter of bettering conditions on the farms, and coincidently the mill companies should improve conditions in their own villages. At

[1] Vol. XVII, Hookworm Disease Among Cotton-Mill Operatives, p. 34.

present, although the mill villages are in a far more sanitary state than the farms, they are far from being in a satisfactory condition.

Together with this improvement of farm and village sanitation, there should go medical treatment of existing cases, especially those of heavy infection. Both of these courses are highly desirable if any serious attempt is to be made to grapple with the disease.

From a practical standpoint, while it can be reasonably concluded that hookworm disease might eventually be entirely eradicated by improved sanitation alone, it is scarcely to be hoped that it can be eradicated by treatment alone. The two procedures should go hand in hand, the sanitation for the benefit of the entire population, the treatment more particularly for the benefit of the more heavily infected cases.[1]

[1] Vol. XVII, Hookworm Disease Among Cotton-Mill Operatives, p. 37.

CHAPTER XVIII.—EMPLOYMENT OF WOMEN AND CHILDREN IN SELECTED INDUSTRIES.[1]

INTRODUCTION.

This volume gives the results of an inquiry into the employment of women and children in 23 industries, selected for study either because of the number of women or children or both which they employed, or because they showed some special aspect of the employment of one or both of these classes. The industries selected were as follows:

Canning and preserving, fruits and vegetables.
Canning and preserving, oysters.
Cans and boxes, tin.
Cigar boxes.
Cigarettes.
Cigars.
Clocks and watches.
Confectionery.
Core making.
Corsets.
Crackers and biscuits.
Hardware and metal specialties.
Hosiery and knit goods.
Jewelry.
Needles and pins.
Nuts, bolts, and screws.
Paper boxes.
Pottery.
Rubber and elastic goods.
Shirts, overalls, and underwear.
Stamped and enameled ware.
Tobacco (smoking and chewing) and snuff.
Woolen and worsted goods.

Geographically the inquiry was limited to 17 States—Maine, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Ohio, Illinois, Indiana, Michigan, Wisconsin, Maryland, North Carolina, Georgia, Florida, and Louisiana. This group was selected as including the chief manufacturing States and as presenting a wide range of conditions, both legal and industrial, affecting the work of women and children. No complete study of any industry or of any State was made, but each industry was studied in as many different States as possible.

Four hundred and forty-two establishments were visited and data secured concerning the employees found at work. The schedule used for this purpose contained questions as to the exact work done, sex, age, conjugal condition and race, and also as to the number of hours worked, the money earned during an actual week taken as generally representative of normal conditions, usually that immediately preceding the visit of the agent, and the rate, whether by piece or time, according to which payment was made. One such schedule was filled out for each employee studied and upon the information thus obtained the present volume is based.

[1] This chapter is taken, with slight changes, from pages 15-36 of Volume XVIII of the original report.

The field work of the investigation was carried on from December, 1908, to April, 1909, and all the facts of this report relate to that period.

For each industry investigated a text table is given showing the number of establishments visited and the normal number of adults and children, by sex, employed in each. On these figures are based all statements concerning the total number of employees, their sex distribution, and the relative importance of children in a given industry. Tables are also given concerning the age, race, conjugal condition, and earnings of the employees studied. In each case these tables deal only with the number for whom the specific detail under consideration was learned.

INDUSTRIES AND EMPLOYEES.

The industries studied, the normal number of employees in each establishment concerning which information was gained, the distribution of the employees by sex and age grouping, and the number of establishments in which they were found are shown in the following table:

NORMAL NUMBER AND PER CENT OF EMPLOYEES OF EACH SEX UNDER 16 YEARS OF AGE AND 16 YEARS OF AGE AND OVER IN ESTABLISHMENTS FURNISHING DATA, BY INDUSTRY.

Industry.	Establishments.	Normal number of employees.					Total employees.	Per cent of total employees.				
		16 years and over.		Under 16 years.				16 years and over.		Under 16 years.		
		Male.	Female.	Male.	Female.	Total children.		Male.	Female.	Male.	Female.	Total children.
Canning and preserving, fruits and vegetables	4	377	639	2	45	47	1,063	35.5	60.1	0.2	4.2	4.4
Canning and preserving, oysters	4	229	192	27	37	64	485	47.2	39.6	5.6	7.6	13.2
Cans and boxes, tin	8	1,151	390	95	35	130	1,671	68.9	23.3	5.7	2.1	7.8
Cigar boxes	14	418	472	45	47	92	982	42.6	48.1	4.6	4.8	9.4
Cigarettes	6	523	1,360	26	76	102	1,985	26.3	68.5	1.3	3.8	5.1
Cigars	58	5,062	9,698	129	893	1,022	15,782	32.1	61.4	.8	5.7	6.5
Clocks and watches	5	2,141	980	88	30	118	3,239	66.1	30.3	2.7	.9	3.6
Confectionery	47	2,211	3,069	118	571	689	5,969	37.0	51.4	2.0	9.6	11.6
Core making	7	4,108	387	3	.....	3	4,498	91.3	8.6	.1	.....	.1
Corsets	9	760	3,828	13	256	269	4,857	15.6	78.8	.3	5.3	5.6
Crackers and biscuits	32	1,668	1,933	60	237	297	3,898	42.8	49.6	1.5	6.1	7.6
Hardware, etc	7	3,114	1,127	70	65	135	4,376	71.2	25.8	1.6	1.5	3.1
Hosiery and knit goods	65	4,041	11,248	435	1,227	1,662	16,951	23.8	66.4	2.6	7.2	9.8
Jewelry	5	385	224	10	18	28	637	60.4	35.2	1.6	2.8	4.4
Needles and pins	3	794	572	28	65	93	1,459	54.4	39.2	1.9	4.5	6.4
Nuts, bolts, and screws	6	1,904	582	48	82	130	2,616	72.8	22.3	1.8	3.1	4.9
Paper boxes	56	1,178	3,564	53	592	645	5,387	21.9	66.1	1.0	11.0	12.0
Pottery	11	1,678	602	55	42	97	2,377	70.6	25.3	2.3	1.8	4.1
Rubber and elastic goods	3	580	274	6	9	15	869	66.7	31.5	.7	1.0	1.7
Shirts, overalls, etc	8	582	3,217	58	334	392	4,191	13.9	76.8	1.4	8.0	9.4
Stamped and enameled ware	16	4,660	[1] 1,454	132	85	217	[1] 6,331	73.6	23.0	2.1	1.3	3.4
Tobacco and snuff	22	4,442	4,744	477	312	789	9,975	44.5	47.6	4.8	3.1	7.9
Woolen and worsted goods	46	6,419	5,373	391	541	932	12,724	50.4	42.2	3.1	4.3	7.4
Total	442	48,425	[1] 55,929	2,369	5,599	7,968	[1] 112,322	43.1	49.8	2.1	5.0	7.1

[1] Not including 128 female employees in one establishment for which males were not reported.

It will be seen that the numbers studied in the different industries varied widely, but that in general they were large. In only 4 did the number fall below 1,000. Of the other 19 industries 15 had over 2,000 employees, 7 had over 5,000, and 3 had over 12,000. The percentage which women and girls form of the workers in each industry ranges from 8.6 per cent in core making to 84.7 in the making of shirts, overalls, etc. Core making was included in spite of its small proportion of female workers because it presented a conspicuous example of women engaged in a kind of work usually reserved for men. Except in this one instance the proportion of female workers never fell below one-fifth of the working force, while in 11 cases it rose to one-half or over. Of the total group of 112,322 workers, females formed 54.8 per cent.

If core making, in which children were practically not employed, be omitted from consideration, far less variation is found in the proportion of children than in the proportion of women employed. There were only 3 industries—oyster canning, candy making, and paper-box making—in which those under 16 formed as much as or more than 10 per cent of the workers, while in 16 industries they formed less than one-twelfth. They were least numerous, both absolutely and relatively, among the makers of rubber goods (core making still being omitted as a nonchild-employing industry), where they formed only 1.7 per cent of the total, and relatively most numerous among the oyster canners, of whom they formed 13.2 per cent. Girls were over twice as numerously employed as boys, forming 5 per cent of the total, against 2.1 per cent which the boys formed.

CHANGE IN CHARACTER OF WOMEN'S WORK.

As the present investigation was not complete it can not be assumed that the sex distribution shown in this table is that prevailing throughout each industry as a whole. All that can be said is that these were the proportions found in the establishments visited. Nevertheless, when the number studied in a given industry amounts to 5,000 or more, it is not unreasonable to conclude that the sex distribution thus found at least approaches that of the industry as a whole. Seven of the industries studied fulfill this condition, and the relative importance of female workers in these suggests a curious change in the kind of employment which falls to women as their work shifts from the house to the factory. These industries, the number of their employees, and the proportion of female workers were as follows:

TOTAL EMPLOYEES IN INDUSTRIES IN WHICH THE NUMBER STUDIED EXCEEDED 5,000, AND PER CENT OF FEMALE EMPLOYEES IN EACH INDUSTRY.

Industry.	Number of employees.	Per cent of female employees.
Cigars	15,782	67.1
Confectionery	5,960	61.0
Hosiery and knit goods	16,951	73.6
Paper boxes	5,387	77.1
Stamped and enameled ware	[1] 6,331	24.3
Tobacco and snuff	9,975	50.7
Woolen and worsted goods	12,724	46.5

[1] Not including 128 female employees in one establishment, for which males were not reported.

The preparation of foodstuffs, spinning, weaving, and garment making have been regarded as woman's special work from time immemorial, so that the second, third, and seventh of the above industries may be looked upon as peculiarly their field. But they are relatively most numerous in the making of paper boxes, an industry which has no relation of any kind to their traditional activities. They are relatively more numerous in the manufacture of cigars than in the making of candy, and play a more important part in preparing tobacco and snuff than in manufacturing woolen and worsted goods. The figures do not justify definite conclusions, but there is at least a suggestion that women's work is being taken not only out of their homes but out of their hands, and that under the modern factory system the idea of what are characteristically women's employments is undergoing a profound modification.

AGE OF FEMALE WORKERS, BY INDUSTRIES.

The following table shows for each industry the number and proportion of females employed and the proportion of these in several age groups:

PER CENT OF TOTAL FEMALE EMPLOYEES IN SPECIFIED AGE GROUPS, BY INDUSTRY.

Industry.	Total number of employees.	Total number of female employees.	Per cent of female employees.	Per cent of female employees reporting age—				
				Under 16	16 and 17	18 and 19	20 to 24	25 and over.
Canning and preserving, fruits and vegetables	1,063	684	64.3	6.6	27.0	17.6	24.8	24.0
Canning and preserving, oysters	485	229	47.2	13.7	8.7	14.1	14.1	49.4
Cans and boxes, tin	1,671	425	25.4	9.5	18.4	23.7	33.2	15.1
Cigar boxes	982	519	52.9	9.4	21.5	14.4	30.7	24.0
Cigarettes	1,985	1,436	72.3	5.0	19.6	21.8	27.6	26.0
Cigars	15,782	10,591	67.1	9.6	21.7	22.5	25.9	20.2
Clocks and watches	3,259	1,010	31.2	2.2	13.7	19.6	33.3	31.1
Confectionery	5,960	3,640	61.0	15.8	28.5	19.4	21.2	15.1
Core making	4,498	387	8.6	.....	17.2	25.7	37.0	10.1
Corsets	4,857	4,084	84.1	8.3	16.3	16.2	23.6	35.7
Crackers and biscuits	3,898	2,170	55.7	11.2	26.8	23.2	24.6	14.2
Hardware, etc	4,376	1,192	27.3	6.3	18.5	25.7	27.5	22.0
Hosiery and knit goods	16,951	12,475	73.6	10.5	19.0	18.1	28.1	24.3
Jewelry	637	242	38.0	9.8	19.7	16.4	29.0	25.1
Needles and pins	1,459	637	43.7	10.1	21.2	18.3	30.0	20.5
Nuts, bolts, and screws	2,610	664	25.4	12.4	19.5	27.0	26.9	14.2
Paper boxes	5,787	4,156	71.8	14.8	25.7	17.9	21.9	19.7
Pottery	2,377	644	27.1	6.2	15.2	16.4	23.4	38.8
Rubber and elastic goods	900	293	32.5	3.6	12.6	14.4	29.9	39.5
Shirts, overalls, and underwear	4,191	3,551	84.8	10.2	18.7	17.5	29.6	24.1
Stamped and enameled ware	[1] 6,131	[1] 1,559	24.3	5.8	25.5	26.8	28.5	13.4
Tobacco and snuff	9,975	5,056	50.7	5.6	12.2	20.4	26.1	35.7
Woolen and worsted goods	12,721	5,914	46.5	8.9	18.5	22.2	22.1	28.3
Total	[1] 112,522	[1] 61,528	54.9	9.1	20.6	20.2	25.8	24.3

[1] Not including 128 female employees in one establishment for which males were not reported.

The most striking feature of this table is the low age level prevailing almost without exception throughout these industries. Only five of them show as many as one-third of their workers in the group aged 25 years and over, and only one shows as many as two-fifths here. This industry—oyster canning—is peculiar in that it shows relatively large proportions in both the youngest and the oldest groups, the intermediate groups showing a smaller proportion than any other industry studied. This may be due to the fact that the work done by women in it is so simple that the young and the old alike can do it, and so unpleasant that those whose age and family circumstances permit them to work at something else are not likely to undertake it.

On the whole confectionery seems to show a lower age level than any other industry studied. It has the largest proportion under 16, the largest proportion aged 16 and 17, and the smallest proportion aged 20 and over. The manufacture of crackers and biscuits comes next, followed by the manufacture of paper boxes. No satisfactory

comparison between the industries can be made, however, as the location of the particular factories visited affected the age distribution of the employees materially. Thus, the manufacture of hardware and metal specialties was studied only in one State in which it was illegal for children to begin work under 14, while oyster canning was studied in States having a lower standard and permitting an evasion even of that.

DURATION OF INDUSTRIAL LIFE OF WOMEN.

The age distribution of these workers has some bearing upon the question of how long women are apt to stay in the industrial field and the age at which the majority leave. In some of the industries studied girls as young as 8 years old were found, while in more than half of them women of 65 or over were found. Roughly, then, the ages of this group of female workers ranged from a minimum of 8 to a maximum of 70 years. But only 3.9 per cent[1] (2,160) of the whole group were under 15, so it is evident that relatively only a small number enter industrial pursuits before they are at least 15 years old. At 15 the number, made up partly of those who, entering earlier, remained at work and partly of those who began at this age, was 3,158, or more than were found in the whole age group below 15. A considerable proportion, therefore, of these 15-year-old employees must have begun work at this age.

The real rush into industrial employment, however, seems to begin at 16, at which age nearly one-tenth of the whole group were found. For two years more the number coming in exceeds those going out, the number in any one year age group reaching its maximum at 18, where 6,224 were found. At 19 the number has fallen off by more than 1,200, and thenceforth the decrease is rapid. The following table shows the number and proportion of the female workers at specified ages:

NUMBER AND PER CENT OF FEMALE WORKERS OF EACH SPECIFIED AGE.

Age group.	Number.	Per cent.
Under 15	2,160	3.9
15 years	3,158	5.7
16 years	5,370	9.7
17 years	5,741	10.4
18 years	6,224	11.3
19 years	4,933	8.9
20 years	4,409	8.0
21 years	3,176	5.7
22 years	2,701	4.9
23 years	2,164	3.9
24 years	1,823	3.3
25 to 29 years	5,563	10.0
30 years and over	7,911	14.3
Total	55,328	100.0

[1] Based on number (55,328) of female employees whose exact age was learned.

So far as this group of workers can be taken as typical, it appears that about 1 in 10 begins her industrial life before she is 16, less than 1 in 4 continues it after she is 25, and only 1 in 7 keeps on after 30. For the great majority the period of industrial life falls between 15 and 25 years of age.

The above figures can not be taken as applying to all women in industry. This group was made up for the most part of unskilled workers in occupations which gave them little chance of advancement and which were not in themselves sufficiently attractive and interesting to hold women longer than financial stress rendered their employment necessary. Moreover, even for these industries the investigation was not exhaustive, and since the purpose was to study the employment of women and children it is quite possible that the industries selected show a lower age level than that prevailing in the industrial world as a whole. And even in this group, while the great majority are young, it must not be forgotten that one-seventh of the whole number have reached or passed 30 years of age.

PROPORTION OF OLDER WOMEN IN INDUSTRIES STUDIED.

The proportion of women aged 30 or over in the various industries differs widely. Four industries—hardware and metal specialties, jewelry, needles and pins, and rubber goods—were studied in only one State, so that the local circumstances may have determined the age grouping. Omitting these four, the number and proportion of women aged 30 years or more in each industry were as follows:

NUMBER AND PER CENT OF FEMALE WORKERS 30 YEARS OF AGE AND OVER IN EACH SPECIFIED INDUSTRY.

Industry.	Number.	Per cent.
Canning and preserving, fruits and vegetables	99	14.54
Canning and preserving, oysters	101	41.91
Cans and boxes, tin	36	10.08
Cigar boxes	67	12.45
Cigarettes	213	14.96
Cigars	1,083	11.64
Clocks and watches	135	15.84
Confectionery	242	7.97
Core making	10	2.64
Corsets	959	24.69
Crackers and biscuits	144	6.89
Hosiery and knit goods	1,267	13.14
Nuts, bolts, and screws	45	6.98
Paper boxes	383	10.21
Pottery	165	25.79
Shirts, overalls, and underwear	412	12.28
Stamped and enameled ware	96	6.40
Tobacco (smoking and chewing) and snuff	1,078	23.53
Woolen and worsted goods	943	17.98

Clearly the proportion of older workers in an industry is not necessarily an indication of the skilled character of its work. Apparently women who have acquired a skilled occupation may remain in the industry in which they can practice it until after 30, or women

over 30 who find wage earning necessary may enter an industry in which they find work so unskilled and simple that their lack of industrial training and even their loss of the speed of the more youthful workers do not debar them. The five industries showing the largest proportion of these older workers illustrate this difference. Oyster canning, pottery making, and the manufacture of smoking and chewing tobacco and snuff[1] all showed women of 30 years and over engaged in unskilled labor of a particularly rough, dirty, and unattractive kind. There is some reason for thinking that younger workers, who are usually a little freer to choose what they will do, would not take this at all generally, thus leaving the field open for the older workers, who must take what they can get. Corset making and the manufacture of woolen and worsted goods, on the other hand, present entirely different conditions. Neither has the unpleasant features of the work done by women in the first three industries. In the woolen and worsted manufacture a large number of the women employees have a skilled trade, which they are naturally reluctant to leave. In corset making none of the work done by women is skilled, but it is work which is in line with the traditional feminine occupations and which a woman of any degree of neatness and deftness could enter without preliminary training.

The other industries show a similar lack of uniformity. In the manufacture of clocks and watches women perform operations requiring judgment and accuracy, and it is difficult not to suspect a connection between this fact and the relatively high proportion of women 30 years of age and over in the industry. But in canning fruit and vegetables and in making cigarettes, women have no skilled occupations, yet these industries show almost as large a proportion, aged 30 years and over, as clock and watch makers. Apparently older women may be found numerously in an industry because its occupations require skill and training, or because they require neither, and only a study of the individual industry will show which reason is operative in a given case.

AGE OF GREATEST MASSING.

The age of greatest massing in the separate industries varied from 16 to 19, but for the greater number was at 18. In the manufacture of paper boxes, cigar boxes, and jewelry more of the female workers were found at 16 than at any other age; in making cigarettes, canning fruits and vegetables, and making confectionery and crackers and biscuits 17 was the age of greatest massing; the manufacture of needles and pins showed exactly equal numbers at 17 and 19; core makers showed their greatest number at 19; and in the remaining industries 18 was the age of maximum numbers.

[1] All three of these industries showed an unusually large proportion of married women among their workers.

EARNINGS, BY INDUSTRIES.

The variation in the age level of the industries is so great that earnings can not fairly be compared without some allowance for this factor. The inclusion of a large number of children under 16, as in the manufacture of confectionery and of paper boxes, obscures the facts as to the earnings of the grown women found in the industry. Moreover, the significant point in regard to the earnings made in an industry is what proportion of those who might reasonably expect to be self-supporting are really so. By excluding all workers under 18, a much fairer idea is given of what an industry really offers to women in the way of earnings. The following table shows for each industry the proportion, by sex, of employees aged 18 years and over in each of several earnings groups:

PER CENT OF EMPLOYEES 18 YEARS OF AGE AND OVER OF EACH SEX EARNING LESS THAN SPECIFIED AMOUNTS IN A REPRESENTATIVE WEEK, BY INDUSTRY.

Industry.	Males.					Females.				
	Number 18 years of age and over.	Per cent 18 years of age and over earning—				Number 18 years of age and over.	Per cent 18 years of age and over earning—			
		Under $4	Under $6	Under $8	Under $10		Under $4	Under $6	Under $8	Under $10
Canning and preserving, fruits and vegetables	353	1.4	2.0	8.2	44.8	449	5.8	59.2	93.5	98.9
Canning and preserving, oysters	152	37.5	51.3	64.5	83.6	155	56.1	99.4	100.0	100.0
Cans and boxes, tin	742	7.3	18.1	33.2	54.0	225	18.7	50.2	79.5	95.6
Cigar boxes	292	2.4	10.3	19.5	38.4	335	21.5	61.8	84.5	96.1
Cigarettes	400	1.7	8.7	28.3	45.0	1,071	9.6	33.1	75.4	92.9
Cigars	4,465	2.3	5.4	11.3	21.4	5,994	12.7	39.3	71.3	87.6
Clocks and watches	1,718	1.1	4.4	13.8	23.7	696	7.0	33.5	72.3	94.5
Confectionery	1,460	4.0	15.7	33.1	50.4	1,948	16.2	55.6	81.3	92.0
Core making	56	.....	5.4	26.8	53.6	307	2.0	22.1	61.9	83.1
Corsets	451	...	1.3	5.1	18.6	2,749	10.0	29.7	58.9	85.3
Crackers and biscuits	1,237	1.1	3.6	15.0	34.0	1,273	12.7	54.0	82.0	96.3
Hardware, etc	2,846	1.7	5.2	18.4	43.2	803	12.0	57.9	88.2	98.8
Hosiery and knit goods	2,218	1.8	7.1	22.7	46.8	7,251	7.7	31.7	64.0	84.6
Jewelry	206	1.9	9.2	21.4	34.5	129	8.5	31.8	67.4	86.0
Needles and pins	722	1.0	2.9	11.4	23.0	427	4.4	27.2	61.6	97.2
Nuts, bolts, and screws	259	4.2	10.8	28.6	68.3	433	17.3	61.7	92.1	99.5
Paper boxes	909	1.5	6.1	19.2	37.0	2,213	10.0	40.1	74.5	92.4
Pottery	1,465	2.1	7.8	18.3	30.2	503	16.5	45.5	65.8	83.1
Rubber and elastic goods	542	1.7	3.7	9.0	36.5	243	5.2	28.8	56.7	80.3
Shirts, overalls, etc	502	3.6	17.1	37.3	59.8	2,371	14.2	55.5	89.9	98.3
Stamped and enameled ware	2,587	4.9	10.7	24.9	48.7	992	13.2	45.0	72.7	87.0
Tobacco and snuff	2,597	10.2	29.3	55.1	80.2	2,670	31.1	55.6	79.7	90.4
Woolen and worsted goods	5,147	2.3	7.5	25.6	50.7	3,915	6.0	29.7	68.9	87.7
Total	31,288	3.2	9.5	23.3	43.5	38,182	12.6	41.1	72.7	89.5

Comparisons between the sexes are easy but of little value, since the work they do is apt to vary so widely. The striking feature of the table is the low level of earnings shown among the women. Of the 38,182 women, all 18 years and over, for whom the facts as to age and earnings were gained, one-eighth earned under $4 and two-fifths under $6 during the week studied.[1] Practically only one-tenth reached or passed $10.

[1] These figures represent the actual earnings for the week preceding that in which the inquiry was made. They were given by each worker on her individual slip and verified from the pay rolls of the establishment.

The different industries show considerable variations, but in general the level of earnings was low. In 10 of the 23 studied, less than half the women aged 18 years and over earned as much as $6, and in 11 more than three-fourths earned less than $8. In only nine industries did as many as one-tenth reach or pass $10. The worst showing was made by oyster canning, in which 99.4 per cent earned under $6, and not one in the whole group earned as much as $8. Very few employees in this industry were studied, however, so that these figures are not so significant as those of some other industries. In confectionery, for instance, of nearly 2,000 women aged 18 years and over practically one-sixth earned under $4, more than half earned under $6, and only 8 per cent reached or passed $10. The manufacture of crackers and biscuits shows nearly the same level, with a smaller proportion in each extreme. The manufacture of tobacco and snuff shows nearly one-third earning under $4, but has practically 10 per cent in the group earning $10 or over. The core makers show smaller proportions earning under $4 and under $6 than are shown in any other industry, while their proportion in the group earning $10 and over is surpassed only by the rubber workers.

RELATION OF SKILL TO EARNINGS.

It is difficult to connect the skill required in an industry except in a very general and indefinite fashion with the earnings received. The manufacture of cigarettes and the manufacture of crackers and biscuits both employ women in occupations demanding speed but little skill, and the number aged 18 years and over studied in each industry was not very dissimilar, but in the one case about one-third and in the other something over one-half earned under $6. In the manufacture of clocks and watches women are employed in a number of delicate operations requiring judgment and accuracy, while in the manufacture of stamped and enameled ware but one of their occupations (dipping) requires any skill, and that of a much rougher and less exacting kind, yet 1 in every 8 of the women engaged in the latter industry reached or passed $10 a week as against 1 in 20 of the watch and clock makers. Apparently, the wages of women in factory industries are very largely unstandardized. In general they are low, but the degree of their lowness seems not to vary so much with the character of the work done as with the custom of a given industry, or, more accurately, of a given employer, for earnings within a given industry varied widely from one establishment to another.

RELATION OF AGE TO EARNINGS, BY INDUSTRIES.

The effect of age upon earnings is a matter of considerable importance, upon which the investigation throws some light. There are two standards by which this might be tested. At what age is there the best chance of obtaining the maximum earnings of an industry, and at what age do the largest proportion earn fair or good wages? Among the male workers in general these two tests would coincide; the age group in which the highest paid workers were found would also be the group in which the smallest proportion earned low and the largest proportion earned good wages, but among the female workers a number of irregularities appear.

The following table, condensed from the detailed tables given for each industry, shows the distribution among three earnings groups of the 54,277 female workers for whom both age and earnings were learned:

DISTRIBUTION OF FEMALE WORKERS BY AGE AND EARNINGS GROUPS.

Age.	Number.	Per cent.	Per cent of total in age group earning—		
			Under $6	$6 to $8	$8 and over.
Under 16 years	5,207	9.59	91.18	7.16	1.66
16 and 17 years	10,858	20.06	68.95	22.09	8.96
18 to 20 years	15,274	28.14	47.33	32.92	19.75
21 to 24 years	9,663	17.80	35.79	33.61	30.60
25 years and over	13,245	24.40	37.75	28.74	33.51
Total	54,277	100.00	51.48	27.50	21.02

This table shows what is also shown by the detailed figures for every industry studied—that up to the age of 24 there is a gradual but steady increase in earning power, each group showing a smaller proportion in the low earnings class and a larger proportion in the good earnings class than is shown by the group immediately preceding it. Those aged 25 and over, however, interfere with this orderly sequence; they show, indeed, a larger proportion in the best paid group, but also relatively more in the group of lowest earnings and fewer in the middle earnings group than are found among those aged 21 to 24. The detailed figures show that this interruption of the usual sequence in the case of these two groups is not universal, but varies from industry to industry, in some cases the earning capacity appearing to develop steadily from the youngest to the oldest group, while in others irregularities similar to those in the above table are found.

In two industries the women aged 25 or over are at an unmistakable disadvantage as compared with those aged 21 to 24. In oyster

canning not one woman of the older group earned as much as $6 a week, while 5 per cent of the younger group reached or passed this sum; and in the manufacture of needles and pins the older women show a larger proportion in each of the lower earning groups and a smaller proportion in the group earning $10 or more than is the case with the women aged 21 to 24.

In the manufacture of tin cans and boxes, clocks and watches, confectionery, crackers, hardware, paper boxes, rubber goods, shirts, and stamped and enameled ware the two groups preserve what might be called a normal relation, the younger showing the larger proportion receiving the smaller earnings and the smaller proportion receiving $10 or over. In the 12 remaining industries the older women invariably show a larger proportion earning less than $4 a week, frequently a larger proportion earning less than $6 or $8, and always a larger proportion earning $10 or over than is the case in the younger group. In other words, the older group shows relatively more of its members among the very low paid and the well paid, while the younger group shows relatively more of its members in the groups of medium earnings.

It is difficult to find any explanation for these variations. The natural presumption is that the older group might contain a number of workers so old as to have lost speed and efficiency, which would account for the large number making small earnings. But the data obtained do not justify this explanation. The exact age at which a woman becomes an industrial derelict, worth less than $4 a week, would be difficult to fix, but most people would admit that in such work as most of these industries offer to women anyone who had reached or passed 45 might be expected to fall within the group of small earnings, and in any industry where those aged 25 or over showed a considerable proportion earning less than $4 a week a considerable number of these women might be looked for. But in the manufacture of smoking and chewing tobacco and snuff, in which 33.54 per cent of the women aged 25 or over earn less than $4 a week, only 13.9 per cent of these women are 45 or over, while in the manufacture of cigarettes, in which only 12.70 per cent of the women 25 or over earn under $4 a week, 12.2 per cent of their number are 45 or over. The manufacture of corsets and of shirts and underwear are two industries demanding about the same degree of skill from their female workers, and in each about one-tenth of those aged 25 or over earned under $4 a week (corset workers 10.27 per cent, shirt makers 10.83 per cent). Yet among the corset makers 19.8 per cent of this group had reached or passed 45, while among the shirt workers only 7.5 per cent were 45 or over. Evidently the presence of workers too old to be of much value does not afford a sufficient explanation of these variations.

The greater proportion of those earning $10 or over a week found in this group is what would be expected. Naturally the skilled workers who are most likely to make such earnings require some time to gain skill so that they are not found in the youngest groups, and having gained it, the fact that they can make such wages tends to keep them in the industry. Also, the forewoman and others in supervisory positions would generally be found in this age group.

Summing up the whole situation, it may be said that with the exception of oyster canning and the manufacture of needles and pins the largest proportion earning $10 or more a week was always found in the group aged 25 or over, but that in seven industries the proportion earning as much as $8 a week or over was larger in the group aged 21 to 24, and in 13 industries those aged 25 and over showed a larger per cent earning under $4 a week than was found in the younger group. Up to the age of 24 increasing years bring on the whole an increase of earning power. Above that age they seem to have a double effect, diminishing the number of moderate earners and increasing the proportion at both extremes of the wage scale.

CONJUGAL CONDITION AND INDUSTRY.

The age distribution of female workers in the various industries and the proportion of those in each age group who were married but not widowed are shown in the following table:

PER CENT OF TOTAL FEMALE EMPLOYEES IN SPECIFIED AGE GROUPS, AND PER CENT IN SPECIFIED AGE GROUPS WHO ARE MARRIED, BY INDUSTRY.

Industry.	Total number of female employees.	Per cent of female employees--			Per cent of female employees of specified age who are married.			
		16 years of age and over.	18 years of age and over.	20 years of age and over.	16 years of age and over.	18 years of age and over.	20 years of age and over.	Total female employees.
Canning and preserving, fruits and vegetables	684	93.4	75.8	68.8	17.3	24.3	32.2	16.2
Canning and preserving, oysters	239	86.3	72.2	63.5	45.7	50.7	61.4	39.4
Cans and boxes, tin	625	90.5	66.8	48.4	9.6	12.0	17.3	8.7
Cigar boxes	519	90.6	76.2	54.7	8.2	10.2	11.5	7.4
Cigarettes	1,430	95.0	77.2	53.6	8.3	10.2	12.3	7.9
Cigars	10,891	90.4	67.9	46.2	17.1	22.2	30.3	15.5
Clocks and watches	1,010	97.8	78.2	64.5	6.7	7.8	9.5	6.6
Confectionery	3,640	84.2	64.8	36.3	8.1	12.1	17.0	6.8
Core making	307	100.0	64.3	47.1	7.7	9.0	11.9	7.7
Corsets	4,094	91.7	75.5	59.2	16.9	20.4	24.6	15.5
Crackers and biscuits	2,170	88.8	65.6	38.8	4.1	5.9	9.0	3.7
Hardware, etc	1,192	93.7	68.0	49.5	17.6	21.6	27.8	16.5
Hosiery and knit goods	12,475	89.5	71.4	52.4	10.4	13.1	16.5	9.3
Jewelry	242	90.2	73.8	54.1	5.5	7.0	8.9	4.9
Needles and pins	637	89.9	71.6	50.4	13.2	16.6	21.6	11.9
Nuts, bolts, and screws	664	89.6	69.6	41.1	14.4	18.1	26.9	12.7
Paper boxes	4,136	85.2	67.3	41.6	8.9	8.4	11.1	5.0
Pottery	644	93.8	77.4	62.2	21.1	25.0	30.6	19.8
Rubber and elastic goods	263	95.4	82.0	69.4	16.8	18.9	22.8	16.2
Shirts, overalls, etc	3,551	89.8	72.3	53.6	6.5	8.1	10.1	5.8
Stamped and enameled ware	1,867	94.2	67.4	41.9	7.4	9.9	14.8	7.0
Tobacco and snuff	5,058	94.4	74.0	61.8	22.2	25.4	31.7	21.0
Woolen and worsted goods	8,914	91.1	68.9	50.4	24.1	30.0	39.8	21.9
Total	61,656	88.9	70.3	50.1	13.7	17.5	22.6	12.4

Evidently the lower the age level in a given industry the fewer married women are likely to be found in it. Hence, it is fairer to make the comparison between workers in the same age group than between the whole body of workers in each industry. Probably the situation is best shown in the group aged 20 or over, since these have all reached an age at which marriage is customary. It will be noticed that over one-fifth of the workers in this group were married, not widowed; in other words, they had husbands on whom theoretically the duty of supporting the family devolved. The kind of work done by women in the industries studied, and the low level of their earnings, make it decidedly improbable that this large proportion of married women had taken up work outside their homes for the sake of variety or pin money. The implication seems rather plain that a family wage was required for the family support, or at least that the earnings of the husband were insufficient for that purpose. As there were nearly 7,000 women in this group, the situation can hardly be regarded as a casual or accidental one.

The proportion of married women in this age group varies widely from one industry to another. The highest proportion, 61.4 per cent, was found in oyster canning, in which, on the whole, conditions were more unpleasant and the wage level lower than in any other industry studied. In this case it is known that their presence was partly due to the system of hiring family groups, a system which, by enabling a married woman to bring her children in to work with her, solves from one point of view the question of what to do with the children if the mother goes to work. In two industries showing a high percentage of married women in this age group, cigar making, with 30.3 per cent, and the manufacture of woolen and worsted goods, with 39.8 per cent, it seems possible that these high proportions are at least partly due to the fact that in each women have skilled occupations which tend to hold them in the industry. Elsewhere no such connection is even suggested. In the three other industries in which 30 per cent or more of the women in this age group are married, canning fruits and vegetables, pottery making, and preparing smoking and chewing tobacco and snuff, the occupations followed by women demand sometimes strength and sometimes speed, but rarely require either skill or intelligence.

In most cases it is not possible from the data at hand to decide why one industry shows a high and another a low percentage of married women. The table given shows what were the proportions found, but does not explain them. Its two really significant features are that more than one-fifth of the women aged 20 years and over, and practically one-eighth of the whole group without regard to age, are married women with husbands living.

It is worth while in this connection to notice the proportion of married women found among the workers in the four industries which received special and detailed investigation. Considering only the female workers who were 20 years of age and over, the number studied in each industry and the proportion married were as follows:

PER CENT OF FEMALE WORKERS 20 YEARS OF AGE AND OVER IN EACH SPECIFIED INDUSTRY WHO WERE MARRIED.

Industry.	Female workers 20 years of age and over.	
	Number.	Per cent married.
Cotton textile industry:[1]		
New England group	10,237	38.4
Southern group	7,285	40.7
Men's ready-made clothing[2]	6,513	28.6
Glass industry[3]	1,166	12.6
Silk industry[4]	5,838	16.0

[1] See Report on Condition of Woman and Child Wage Earners in the United States, Vol. I, p. 637.
[2] Idem, Vol. II, p. 542.
[3] Idem, Vol. III, p. 651.
[4] Idem, Vol. IV, p. 348.

The five groups of employees show considerable variation in this respect, but it is worthy of note that the three largest groups show a higher percentage of married workers than prevails among those 20 years of age or over in the combined industries studied in this investigation. The two which show smaller percentages have, respectively, one-eighth and very nearly one-sixth married, proportions sufficiently large, when taken in connection with the three other groups, to show that there is nothing abnormal about the figures gathered for the present study. It is evident that the married woman who is neither widowed, deserted, nor divorced is a considerable factor in the industrial world.

RACE AND AGE.

The total number of female workers reporting definitely as to age and the number and proportion of these in several age groups are shown by race in the following table:

NUMBER AND PER CENT OF FEMALE WORKERS OF EACH SPECIFIED RACE WHO WERE UNDER 18 YEARS OF AGE, 18 YEARS OF AGE AND OVER, 20 YEARS OF AGE AND OVER, AND 25 YEARS OF AGE AND OVER.

Race.	Total female employees.	Number of female employees—				Per cent of total female employees—			
		Under 18 years of age.	18 years of age and over.	20 years of age and over.	25 years of age and over.	Under 18 years of age.	18 years of age and over.	20 years of age and over.	25 years of age and over.
American, colored	1,186	225	961	821	559	19.0	81.0	69.2	47.1
American, white	17,913	5,630	12,283	8,718	4,006	31.4	68.6	48.7	22.4
Austrian	431	79	352	207	61	18.3	81.7	48.0	14.2
Bohemian	1,170	326	844	636	378	27.9	72.1	54.4	32.3
Canadian	309	76	233	178	89	24.6	75.4	57.6	28.8
Canadian, English	287	49	238	164	72	17.1	82.9	57.1	25.1
Canadian, French	669	178	491	383	183	26.6	73.4	57.2	27.4
Cuban	237	43	194	156	112	18.1	81.9	65.8	47.3
English	1,638	336	1,302	1,057	662	20.5	79.5	64.6	40.4
French	435	95	340	271	149	21.8	78.2	62.3	34.3
German	9,523	3,020	6,503	4,616	2,057	31.7	68.3	48.5	21.6
Hebrew, Austrian	285	90	195	102	17	31.6	68.4	35.8	6.0
Hebrew, Russian	1,233	400	833	455	74	32.4	67.6	36.9	6.0
Hebrew, other	257	89	168	99	18	34.6	65.4	38.5	7.0
Hungarian	1,320	271	1,058	727	393	20.4	79.6	54.7	29.6
Irish	5,760	993	4,767	3,993	2,576	17.2	82.8	69.3	44.7
Italian	3,212	1,345	1,867	1,251	598	41.9	58.1	38.9	18.6
Polish	1,964	759	1,205	643	210	38.6	61.4	32.7	10.7
Polish, Austrian	1,421	279	1,142	738	254	19.6	80.4	51.9	17.9
Polish, German	1,809	965	844	451	110	53.3	46.7	24.9	6.1
Polish, Russian	818	249	569	351	118	30.4	69.6	42.9	14.4
Portuguese	150	52	98	71	38	34.7	65.3	47.3	25.3
Russian	595	161	434	246	81	27.1	72.9	41.3	13.6
Scandinavian	759	199	560	406	157	26.2	73.8	53.5	20.7
Scotch	389	78	311	258	132	20.1	79.9	66.3	33.9
Spanish	117	28	89	76	49	23.9	76.1	65.0	41.9
Other Slavs	599	183	416	226	128	30.6	69.4	37.7	21.4
All other	729	200	529	375	164	27.4	72.6	51.4	22.5
Total	55,224	16,398	38,826	27,675	13,445	29.7	70.3	50.1	24.3

Marked racial differences appear in this table, especially in the proportions in the youngest and the oldest groups. A priori it might be assumed that as the proportion of adults among the newer immigrants is greater than among the native born and the older immigrant races, the newer races would show a correspondingly larger proportion of their workers in the older groups. With a few exceptions, the exact reverse of this situation prevails. The Cuban women show the largest proportion found in the group aged 25 and over—47.3 per cent—but they are a very small group massed in one industry in which they had acquired a skilled trade. Next to them the colored women, all native born, show the largest percentage in this group, and next to them come the Irish, an immigrant race of long standing. The Germans, who are also old comers, show rather a low proportion of older workers, but the English and Scotch both have high percentages. On the other hand the Polish workers, the Italians, the Russians, the Austrians, and, most of all, the Hebrews show small proportions in this age group. The Bohemians and the Spanish

showed high proportions in the older groups, but in both cases they were found chiefly among the cigar makers and were skilled workers.

The white Americans and the Germans are the only races long established in the United States who show a larger proportion under 18 than prevails in the total group of females reporting as to age, while the Scotch, the English, and especially the Irish, fall far below this average. The newer immigrant races for the most part show large percentages in this age group, the German-Polish workers showing the highest per cent found—53.3 per cent. The Italians also have an exceptional percentage—41.9 per cent.

Considered as a whole, the German-Polish and the Hebrew women show much the lowest age level found, while of the race groups large enough for the figures concerning them to be really significant the colored Americans and the Irish have the highest age level. The figures for these two races show a close correspondence in their age distribution.

Considering the whole group of female workers studied, the age level is distinctly low, not quite one-fourth having reached 25 years of age, and practically one-half being under 20.

RACE AND CONJUGAL CONDITION.

The conjugal condition, by race, of the 56,043 female workers reporting on these points is shown in the following table:

PER CENT OF TOTAL FEMALE EMPLOYEES OF EACH SPECIFIED RACE WHO WERE SINGLE, MARRIED, AND WIDOWED.

Race.	Total female employees.	Per cent of total female employees 18 years and over	Per cent of total female employees—		
			Single.	Married.	Widowed.
American, colored	848	81.0	48.1	36.1	15.8
American, white	18,197	68.6	85.7	9.9	4.4
Austrian	430	81.7	81.2	13.6	5.3
Bohemian	1,173	72.1	67.1	25.5	7.4
Canadian	315	75.4	79.7	13.3	7.0
Canadian, English	296	82.9	87.5	9.5	3.0
Canadian, French	691	73.4	81.0	15.1	3.9
Cuban	234	81.9	52.1	29.7	18.2
English	1,657	79.5	74.8	18.8	6.4
French	443	78.2	77.7	17.6	4.7
German	9,629	68.3	88.9	7.9	3.3
Hebrew, Austrian	321	68.4	96.0	3.1	.9
Hebrew, Russian	1,401	67.6	95.1	3.9	1.0
Hebrew, others	276	65.4	96.4	2.9	.7
Hungarian	1,333	79.6	54.9	37.6	8.5
Irish	8,929	82.8	85.2	8.1	6.7
Italian	3,444	58.1	74.2	22.1	3.6
Polish	1,993	61.4	86.7	11.4	1.9
Polish, Austrian	1,439	80.4	78.3	19.7	1.9
Polish, German	1,814	46.7	92.9	6.2	.9
Polish, Russian	828	69.6	81.9	15.2	2.9
Portuguese	121	65.3	78.8	19.2	2.0
Russian	606	72.9	88.8	12.1	2.1
Scandinavian	750	73.8	90.0	8.2	1.8
Scotch	397	79.9	80.9	13.6	5.5
Spanish	116	76.1	54.3	32.8	12.9
Other Slavs	899	69.4	67.8	30.2	2.0
All others	723	72.6	86.1	12.4	2.5
Total	56,043	70.3	83.3	12.4	4.3

There is a good deal of difference in the size and the age level of the several race groups, both of which facts would be likely to affect the number of married women found. Numerous other factors might also have an effect on this matter, so that it is not possible from the data at hand to decide definitely upon the attitude of the various races toward the employment of married women outside of their own homes. Nevertheless there seem indications in some groups of a racial attitude. The Irish and the colored women, for instance, had a very similar age distribution, but only 8.1 per cent of the Irish, as compared with 36.1 per cent of the colored women, were married. A considerably larger proportion of the Italians than of the Germans were under 18, so that they might be expected to show a smaller proportion married, but as a matter of fact 22.1 per cent of the Italian female workers were married as against only 7.9 per cent of the Germans. Such wide differences suggest a difference in the whole attitude of these groups toward the employment of married women.

Among three races—the Hungarians, the American colored, and the Spanish—more than 30 per cent of the female workers reporting on this fact were married. Of these the Spanish, of whom 32.8 per cent were married, were so small a group that this proportion may be wholly due to accidental circumstances and therefore without significance. Of the other two races the Hungarians show the highest percentage found of married women, 37.6 per cent, although the colored women had a slightly higher proportion of workers in the group aged 18 years and over, and therefore might reasonably have been expected to show the larger proportion married. Both these race groups are fairly large, so that accidental variations are probably not important in determining the proportions, and the per cent married, not far in either case from two-fifths, is so large as to seem a pretty clear indication that these two races feel no marked objection to having their married women at work outside the home.

On the other hand, the very small proportion married among the Hebrew women seems to show a strong objection on their part to a married woman becoming a wage earner. To a less degree this is true also of the German-Polish, the German, the Irish, and the Scandinavian women. The American white women show a larger proportion married than any of these races, but still fall well below the level for the whole group.

A comparison of the figures of this table with those showing the conjugal condition of the female workers in the cotton textile, silk, and men's ready-made clothing industries shows some interesting similarities and contrasts. For these industries the number, by race, of female workers for whom facts concerning conjugal condition were gained and the proportion of these married, are as follows:

PER CENT OF FEMALE WORKERS IN EACH SPECIFIED INDUSTRY WHO WERE MARRIED, BY RACE.

Cotton textile industry.[1]

Race.	Female workers.	
	Total number.	Per cent married.
New England group:		
American	1,207	22.0
Canadian, French	6,132	27.3
English	1,423	25.3
Irish	2,351	23.9
Italian	284	27.1
Polish	1,797	32.2
Portuguese	721	33.4
Other races	840	25.5
Total	14,755	27.9
Southern group:		
American	16,938	30.7

Men's ready-made clothing industry.[2]

American	887	7.5
Bohemian	1,106	6.1
German	1,783	11.7
Hebrew	1,900	3.6
Italian	3,445	35.9
Lithuanian	276	15.2
Polish	1,889	10.6
Scandinavian	401	14.5
Other races	737	18.2
Total	11,596	17.2

Silk industry.[3]

American	3,522	7.4
Dutch	595	6.1
English	1,204	9.4
German	2,546	11.7
Irish	2,421	4.0
Italian	922	46.3
Lithuanian	58	.....
Polish	390	1.3
Slovak	97	.....
Welsh	339	.6
Other races	1,951	16.6
Total	13,945	11.1

[1] Report on Women and Child Wage Earners in the United States, Vol. I, pp. 639-642.
[2] Ibid., Vol. II, pp. 543, 544.
[3] Ibid., Vol. IV, pp. 346, 347; those under 16 were omitted from these calculations.

Many of the races appear in only one or two of these tables, so that resemblances or dissimilarities may be wholly accidental. Of those which appear more frequently, the Americans invariably show a lower percentage married than prevails in the whole group of female employees in that industry, excepting, of course, in the group of southern textile employees, who were exclusively American. The Irish also fall below the prevailing percentage of married in every group, although in the cotton textile industry they come much closer to the general level than elsewhere. This may be explained in part by the fact that two-fifths of the Irish females in

this industry were weavers; in other words, they had acquired a skilled occupation, and it has been generally apparent throughout this study that women who had gained skilled trades were less likely than the unskilled to give up their work at marriage. Probably the same explanation applies in the case of the English and the Polish women, both of whom show a much higher percentage married in the cotton textile industry than in the other industries studied, and among whom 46.2 per cent and 48.3 per cent, respectively, were weavers. Except in the cotton textile industry, both of these races fall everywhere below the general level in their proportion of married workers.

The Italian is the only race group having a relatively high proportion of married women which appears in these additional tables. It rises much above the general percentage of married except in the cotton textile industry, where it falls slightly below. No explanation can be suggested for this irregularity beyond what may be found in the fact that in this industry the Italians form a very small group, numbering only 284, whereas in the silk industry they numbered 922, in the men's ready-made clothing industry 3,445, and in the combined industries 3,444.

SUMMARY.

The present volume deals with a group of between 50,000 and 60,000 female employees, found in 23 different manufacturing industries, and distributed throughout 17 States. They were a decidedly youthful group, practically half of those for whom precise data were obtained being under 20 years of age, and not quite a fourth being 25 or over. In the main they were single, but one-eighth of the group were married. Racially Americans predominated, white Americans forming nearly one-third (32.4 per cent) of the total number. The relative importance of the foreign races varied so greatly from place to place that no general statement can be made on the subject. There were no indications that American women and those of the older immigrant races were being at all generally driven out of the industries studied by the newer comers. Occasionally there were evidences that certain occupations were passing into the hands of recent immigrants. Generally speaking, these occupations involved work so disagreeable either in itself or in the conditions under which it was carried on that American or Americanized workers were unwilling to do it and it was left for the newcomers, who, having physical strength and an urgent need of employment, would take whatever they could get.

The conditions of work differed so widely, not only from one industry to another, but even between different establishments within the same industry, that general statements can be made only with

much caution. Occupational risks were found of three kinds: Exposure to harmful dusts or fumes, exposure to risk from machinery, and risk of injury from constrained or harmful positions. The most striking examples of the first kind were found in the pottery industry, where a large proportion of the female workers were exposed to lead dusts, and where apparently very few precautions were taken to reduce this risk, or to render inevitable exposure as little harmful as might be. A somewhat similar risk, though much less in degree, was believed to exist in other industries in which women were engaged, in painting, japanning, lacquering, or enameling different kinds of ware. In these cases, however, precautions against injurious dusts or fumes were more generally taken than was the case in the potteries visited.

The dangers from machinery were most marked in the various metal-working trades and in paper-box making. The most frequent risk was in connection with various forms of power or stamping presses and the corner-staying machine in box factories. In both cases the danger arises from the fact that in adjusting her work the operator's hands must approach or reach a spot at which a few seconds later a crushing blow is to be delivered by a metal stamp or die. It is supposed that her hands will be out of the way before the die descends, but the danger of accident or miscalculation is obvious. Some forms of stamping presses are absolutely safe and all may be safeguarded, but in numerous cases this fact was ignored and no guards were used.

The risk of harm from injurious positions is much less apparent and much harder to be sure of than the risk from machinery. The commonest risk came from continuous standing. There was hardly an industry in which at least a portion of the female workers were not on their feet all day long, and in some it was the exception to find workers seated. Some kinds of work could not be done unless the worker was standing, but cases were found in which work could have been done just as well seated, but custom or a belief that greater speed could be attained when standing kept the workers on their feet.

In a few of the cracker factories visited an effort had been made to avoid the strain of long standing by transferring workers for a certain time each day from occupations which involved continuous standing to others in which they could work seated. Occasionally in other industries groups of individual workers arranged some such exchange among themselves, thus securing some relief. It seems possible that in many industries some arrangement of this kind might be devised, but as yet little attention appears to have been given to the matter. In the cracker factories referred to brief rest periods, given twice a day, relieved the strain of rapid work.

Very little evidence was found in this investigation of pace setting by machinery. In a few cases it was found, but far more often speed was secured by means of low piece-rate wages. A very high rate of speed was often shown where this system prevailed, but the data gathered were not sufficient to show whether it was so great as to produce exhaustion or harmful overfatigue.

In general the work done by these women was unskilled. The out-and-out cigar makers, who formed a very small proportion of the women in the cigar industry, had a skilled trade, and so had the weavers and menders in the manufacture of woolen and worsted goods. The hand trimmers of high-grade fancy boxes were skilled workers in the fullest sense of the words, but again these workers formed an exceedingly minute proportion of the box makers. The core makers, a small group, all required some skill and training. Some of the occupations carried on by women in watch and clock making called into play judgment, accuracy, and initiative, and so did a few occupations found in some of the metal-working industries. But all these workers combined were too few to alter the general character of the work done by these women, which at best was only semiskilled, and for the most part was unskilled, mechanical, and monotonous to the highest degree.

On the whole the strongest impression left by the study of this group of between 50,000 and 60,000 women and girls is the absolutely haphazard and unstandardized character of the industrial world as known to them. In general they enter it without preliminary training, picking up what knowledge or deftness they need as they go along. Whether they work in clean, healthful, and comfortable surroundings or in buildings which are an outrage upon health and decency depends largely upon the particular employer they happen to get; in practically every industry both extremes were found. The length of the working hours; the frequency and amount of overtime; the extent to which machinery was used; the extent to which it was safeguarded when used; the subdivision of work and the consequent degree to which the worker's field was narrowed down; the pace at which the work was carried on; provisions for light, ventilation, and comfort—these and many other points depend not upon the worker, not even upon the industry, but very largely upon the attitude of the individual employer. Wide variations were found not only within an industry, but even within establishments in the same industry located within the same State or city.

And when it comes to the question of earnings, the lack of standardization seems to reach its height. In the main the women were wholly unorganized and seemed to have no idea in regard to wages beyond taking what they could get. The determining factor seemed not so much what their services were worth or what the industry

could afford as the individual employer's attitude upon the matter. In one and the same industry employers would be found who so graded their rates that the average employee would be able to earn fair wages, the unusual employee, of course, under such a system earning very good wages; employers who took foreign women because they could get them for lower wages than American women; and employers who sought girls under 16 for all the occupations they could fill on the admitted ground that "they could do as much as a woman and would work for less." With some employers the lowest wages a woman or girl could be induced to work for decided what she could get. In many cases there was an evident intention to treat the employees justly and considerately, but nowhere was there any generally accepted standard of what constituted a fair or reasonable wage. What a woman could earn by a week's work seemed to depend fully as much upon extrinsic factors over which she had no possible control as upon her own ability or her own efforts.

CHAPTER XIX.—LABOR LAWS AND FACTORY CONDITIONS.

INTRODUCTION.

PURPOSE AND SCOPE OF INVESTIGATION.

This volume, which is the nineteenth and last part of the Report on Conditions of Woman and Child Wage Earners in the United States, contains the results of a study of actual conditions as compared with legal requirements in 563 manufacturing establishments, located in 17 States and representing 58 more or less clearly separate industries. The States included were Maine, Massachusetts, Rhode Island, Connecticut, New York, Pennsylvania, New Jersey, Ohio, Illinois, Indiana, Michigan, Wisconsin, Maryland, North Carolina, Georgia, Florida, and Louisiana. These were selected as being important manufacturing States, and also as representing all shades and degrees of labor legislation.

The field work of the investigation was carried on from December, 1908, to April, 1909, and all the facts of this chapter relate to that period. The labor laws referred to are those in force at the date of the investigation.

METHODS USED.

The information concerning the requirements of the labor laws was collected partly from printed laws and judicial decisions and partly from interviews with the enforcing authorities. These interviews were considered necessary to a right understanding of what the laws really meant.

In many cases the effective meaning of a law can be understood only in the light of the interpretation placed upon it by the factory inspectors or others enforcing authority. This may be either because the law is obscure and the obscurity has not been removed by judicial opinion, or because the law vests the enforcing authority with broad discretionary powers. For these reasons it was desirable to obtain the opinions and working interpretations put upon such laws by factory inspectors and other interested persons.[1]

The facts concerning conditions in workshops and factories were learned by personal investigations. Such points were covered as the time schedules according to which work was conducted, overtime,

[1] Vol. XIX, Labor Laws and Factory Conditions, pp. 15, 16.

safety provisions in case of fire, safeguards against accidents from elevators and machinery, conditions of ventilation and sanitation, provisions for the comfort of employees, the posting of time schedules, and the filing of working certificates for children if such filing was required by law.

INDUSTRIES STUDIED AND NUMBER OF MEN, WOMEN, AND CHILDREN EMPLOYED.

The industries selected were those which in each State were of local significance and in which women and children formed a significant factor in the working force. The following table shows the industries, the number of establishments visited in each, and the number, by sex, of children and adults employed:

NUMBER OF EMPLOYEES OF EACH SEX UNDER 16 YEARS OF AGE AND 16 YEARS AND OVER, IN ESTABLISHMENTS VISITED, BY INDUSTRIES.

Industries.	Establishments.	Employees.				
		Male.		Female.		Total.
		16 years and over.	Under 16 years.	16 years and over.	Under 16 years.	
Boots and shoes	6	629	24	313	2	968
Cans, tin	8	1,151	95	320	35	1,671
Canning and preserving	8	606	20	831	82	1,548
Cigar boxes	14	418	45	472	47	982
Cigarettes	6	523	26	1,360	76	1,985
Cigars	60	5,062	129	9,606	893	15,782
Clocks and watches	7	2,141	88	980	30	3,239
Confectionery	50	2,326	118	3,341	582	6,367
Core making	10	4,108	3	287	.....	4,398
Corsets	8	726	13	3,698	240	4,677
Cotton goods	26	5,602	629	3,722	512	10,465
Crackers and biscuits	35	1,763	60	2,014	238	4,075
Gloves	5	191	3	669	41	904
Hardware, etc	9	3,497	71	1,157	66	4,791
Hosiery and knit goods	66	4,041	435	11,248	1,227	16,951
Jewelry	5	385	10	224	18	637
Matches	12	1,672	112	1,011	168	2,963
Nuts and bolts	6	1,904	48	582	82	2,616
Paper boxes	59	1,290	55	3,647	595	5,587
Pottery	12	1,678	55	602	42	2,377
Shirts	9	582	58	3,217	334	4,191
Stamped and enameled ware	15	4,060	132	1,438	85	6,331
Tobacco and snuff	22	4,442	477	4,744	312	9,975
Woolen and worsted goods	49	6,589	396	5,493	546	13,024
All other [1]	57	8,536	331	6,268	442	15,577
Total	563	64,522	3,442	67,522	6,695	142,181

[1] Including industries represented by less than 5 establishments.

The results of the investigation have been presented by topics. That is to say, the labor laws and factory conditions are grouped according to similarity under the following topical or chapter heads: Scope and enforcement of the laws; legal age, prohibited employments, and working papers; hours of labor, night work, posting of time schedules, meal period; posting of labor laws; safeguards

against fire; safeguarding of machinery; safeguarding of elevators; reporting of accidents; provisions for the comfort of employees; and ventilation and sanitation. Under each such head the material is arranged by States, and for each State there is given: First, a summary of the laws regarding the subject treated; second, where desirable and available, comments regarding the interpretation and administration of such laws; and third, a condensed statement, usually in tabular form, of the conditions found in the establishments visited.

ATTITUDE OF STATES TOWARD ENFORCEMENT OF LABOR LAWS.

One of the most important topics dealt with is the attitude in the different States toward the enforcement of the labor laws. Three of the States covered in this investigation—North Carolina, Georgia, and Florida—had failed to provide any special means for enforcing such legislation; violations might be dealt with by indictment by the grand jury or prosecution by local police officials. Each of the other States had recognized the principle of intrusting the enforcement of woman and child labor laws and factory laws to officials specially chosen for that purpose, but not all had carried out the principle fully. In about half, factory inspection formed a distinct and independent administrative department; in the others the duty of factory inspection was made part of the duties of a bureau or department having a broader field of labor activities. In several States the enforcement of the factory laws was divided among several departments or groups of officials.

NUMBER OF PROSECUTIONS FOR VIOLATIONS, BY STATES.

The attitude of the enforcing authorities toward violation of these laws differed widely. Some held that prosecutions were unnecessary, since violators, when informed that they were breaking the laws, were always ready to correct the illegal conditions, while others held that prosecutions and penalties were necessary to insure respect for the laws. The following figures taken from the official reports of the inspecting authorities show the number of prosecutions undertaken during each of the five years immediately preceding the investigation in the States having officials charged with the enforcement of these laws. North Carolina, Georgia, and Florida have no such officials, and hence do not appear in the table.

NUMBER OF PROSECUTIONS UNDERTAKEN FOR VIOLATIONS OF WOMAN AND CHILD LABOR AND FACTORY INSPECTION LAWS.

State.	1904	1905	1906	1907	1908
Maine					
Massachusetts		16	48	40	22
Rhode Island				4	
Connecticut					
New York	49	202	303	443	315
New Jersey	23	8	14	27	5
Pennsylvania	65	70	100	[1]	32
Ohio	3	3	313	319	16
Illinois [2]	1,325	1,001	973	320	[3]
Indiana	[1]	15	[1]	20	[3]
Michigan [4]					
Wisconsin [4]					
Maryland	45	19	26	70	20

[1] Not reported.
[2] These figures are for convictions, the number of prosecutions not being reported.
[3] Figures for 1908 not available when present report was prepared.
[4] Data concerning prosecutions too incomplete for tabulation.

In Louisiana at the time of this investigation factory inspection existed only in the city of New Orleans, and the laws then in force were of such recent origin that there had been no time to show what would be the attitude of the authorities toward their enforcement. In the other States the variations are too wide to be accounted for by any reasonable theory of varying conditions; they probably reflect in part the attitude of the inspectors themselves towards the law, and still more the attitude of the community as a whole. Inspectors are hardly likely to bring prosecutions unless they know that they have a strong public sentiment behind them. Most of the prosecutions shown in the above table were for violations of the laws concerning the employment of children.

PROVISIONS MADE FOR ENFORCEMENT OF LABOR LAWS.

Another indication of the public attitude toward the labor laws appears in the extent of the provision made for their enforcement. A law on the statute book is of no value and may even be a detriment unless some method has been adopted for enforcing it. In three States, as already mentioned, no special provision was made for carrying out labor legislation. In the others the number of officials appointed for its enforcement varied in a way that did not at all correspond to the importance of the separate States as manufacturing centers. New York had 48 factory inspectors engaged in active field work and 9 mercantile inspectors; Massachusetts had only 14 factory inspectors, but definitely assigned the enforcement of some of the factory and labor laws to other official bodies, such as the State board of health. Pennsylvania had 41 inspectors, Ohio 35, and Illinois 28; no other State had a score. Michigan had 14; Rhode Island 3; Wisconsin 12; Maryland 8; and Connecticut 5. Maine and Louisiana each had only 1, but in Louisiana the inspec-

tor's responsibility was limited to New Orleans, while in Maine he was expected to cover the whole State.[1] At the time of this investigation Massachusetts, New York, and Wisconsin were the only States in which the inspectors were appointed under a civil-service system;[2] elsewhere they were very apt to be political appointees, pure and simple.

CONDITIONS FOUND IN FACTORIES STUDIED.

OVERTIME.

A point of interest brought out by the tables given is the amount of so-called overtime in some of the industries studied. The manufacturers themselves were the only source of information on this point; from each a statement was obtained of whether or not overtime had been worked; if so, how often, and to what extent the regular hours had been increased during the overtime period. The answers to these questions usually represented the employer's recollections or estimate, and are therefore not as reliable as if they could have been taken from records. Such as they are, however, they are based on the employers' assertions, and therefore presumably do not exaggerate the amount of overtime worked.

Of the 563 establishments visited, 226 definitely reported that they had worked overtime during the preceding year. For 21 of these, however, it was stated that the overtime work had been limited to adult male workers. For the remaining 205 it was often difficult to secure precise information as to whether women and children had worked the same overtime hours as the men. In many cases the part they took in the process was such that it was almost certain that they would participate in any overtime worked, but it was impossible to obtain a precise statement that they had done so.

There were wide variations among the different industries in regard to overtime. Fifteen industries had each employed over a thousand women and girls in the establishments visited. For these the following figures show the total number of employees in each, the number of establishments inspected, and the number in which, according to the employer's statement, overtime had been worked during the preceding year:

[1] In June, 1915, these States showed marked increases in the number of inspectors: New York had 104 inspectors in actual field work, besides 20 mercantile inspectors, 3 medical inspectors, 35 other inspectors, and 24 charged with supervision of inspection work; Massachusetts had 12 factory inspectors and 12 medical inspectors; Pennsylvania had 59 inspectors, 3 of whom were medical inspectors; Ohio, 36 inspectors; Illinois, 10 factory, 2 medical, and 19 other inspectors; Indiana, 10 inspectors; Michigan, 17 inspectors; Rhode Island, 4 inspectors; Wisconsin, 15 inspectors; Maryland, 10 inspectors; Connecticut, 8 factory and 6 mercantile inspectors; Maine, 3 inspectors; and Louisiana, 1.

[2] Since this investigation was completed Illinois and New Jersey have also placed the factory-inspection force under a civil-service system.

NUMBER OF ESTABLISHMENTS VISITED, NUMBER OF PERSONS EMPLOYED IN SUCH ESTABLISHMENTS, AND NUMBER OF ESTABLISHMENTS REPORTING OVERTIME.

Industry.	Total employees in establishments visited.	Number of establishments visited.	Number reporting overtime during preceding year.
Cigarettes	1,985	6	1
Cigars	15,782	60	10
Clocks and watches	3,239	7	3
Confectionery	6,367	50	43
Corsets	4,677	8	4
Cotton goods	10,465	25	6
Crackers and biscuits	4,075	35	16
Hardware, etc	4,791	9	.....
Hosiery and knit goods	16,951	66	21
Matches	2,963	12	.....
Paper boxes	5,587	30	33
Shirts	4,191	9	4
Stamped and enameled ware	6,331	15	8
Tobacco and snuff	9,975	22	6
Woolen and worsted goods	13,024	49	23

In the candy-making establishments overtime was so general that it might be looked upon as the rule. No other industry made so bad a showing, although the cracker-and-biscuit industry, the manufacture of hosiery, of paper boxes, and of woolen and worsted goods—all industries in which from 35 to 66 establishments were visited—showed large numbers of plants in which overtime had been worked.

The number of times overtime work had been called for varied, according to the employers' statements, from two or three times a year up to "almost every week," and the amount by which the regular weekly hours were increased ranged from 1 hour up to 21. In some cases the amount of overtime worked was excessive. In 35 establishments overtime had been required 60 or more times during the preceding year. In the confectionery industry 10 establishments had required it over 60 times; in 1 it had been called for 70 times—practically 12 weeks of overtime—and the weekly hours had been brought up to 78; in 8 establishments it had been required 78 times, the weekly hours aggregating from 61 to 64 in 5 of these cases and 78 in the other 3; and in 1 it had been required 84 times, the weekly hours, however, in this case rising only to 58 for women and girls.

In the manufacture of paper boxes 4 establishments were reported as having required overtime on 60 or more occasions. In 1 establishment it was required just 60 times, the weekly hours while it lasted being 60; in 1 it was called for 78 times, the weekly hours rising to 62½; in 1 it was required 84 times, weekly hours 58; and in 1 it was required 150 times, the weekly hours while it lasted

being 69. But the manufacture of woolen and worsted goods shows the most extreme figures. In 2 such establishments overtime was called for 60 times, the weekly hours being increased in 1 case to 66 and in the other to 70; in 1 case it was required 65 times, the weekly hours amounting to 62; in a fourth establishment it was required 208, and in a fifth 212 times, the weekly hours in these cases being, respectively, 76 and 66.

In 41 different establishments women or children or both were definitely reported as working, during the periods when overtime was required, more than the legal number of hours per week. In 48 establishments they were reported as regularly exceeding the legal number of daily or weekly hours. There was reason to believe that the legal number of hours was exceeded in many other cases, but in these instances the employers themselves reported the violations.

PROTECTION AGAINST FIRE.

In the matter of fire protection, provision of fire escapes and the like, the legal requirements of the various States differed so widely and involved so many details that it is impossible to summarize the findings. In general it may be said that the laws at that time seemed moderate in their requirements, and enforcement did not seem rigorous. The investigation, it must be remembered, took place before several disastrous factory fires called attention to the general carelessness on this subject and led both to more stringent regulations and to greater care in enforcing them.

REPORTS OF ACCIDENTS.

The States visited also differed widely in their requirements as to reporting accidents occurring in workshops and factories. Accurate and full information of the character and causes of such accidents is necessary if effective laws and regulations for their prevention are to be framed. At the time this investigation was carried on 10 of the 17 States—Massachusetts, Rhode Island, New York, New Jersey, Pennsylvania, Ohio, Illinois, Indiana, Wisconsin, and Louisiana—provided by law for the public reporting of factory accidents. Soon after the investigation was completed Connecticut passed similar laws. The other 6 States had no requirements on the subject.

The 10 States which required reports differed materially as to what should be reported, and when and by whom. Nine States required that accidents should be reported by the individual employer to the State factory inspector or other official with analogous functions. Wisconsin did not require accident reports from employers, but ordered simply that every physician and surgeon in the

State should report to the local registrar of vital statistics all accidents to persons whom he is called upon professionally to treat. The Wisconsin reports therefore included nonindustrial as well as industrial accidents.

The time within which an accident must be reported varied from less than 24 hours after its occurrence to possibly six months. Massachusetts required reports to be made "forthwith," Pennsylvania allowed 24 hours, and New York and Indiana 48 hours. New Jersey, Rhode Island, and Ohio required reports of fatal accidents to be made within specified brief periods, but allowed longer periods for reporting nonfatal casualties. In Illinois and Wisconsin no reports need be made in less than 30 days, and the Louisiana law requires semiannual reports only.

The most important variation, however, is in regard to the kind of accidents which must be reported. In all the States legislating on the subject fatal accidents must be reported. The object of an accident-reporting law is fulfilled when all accidents causing injuries of a reasonably serious character are reported, but difficulty arises when an attempt is made to define the term "serious." To avoid this difficulty New York and Indiana required all accidents, however slight the resulting injuries, to be reported. Pennsylvania and Ohio ordered serious accidents to be reported, but left the responsibility of determining what is meant by serious with the factory inspectors. The remaining States directed that all accidents should be reported which incapacitated the sufferer for a certain period. Illinois fixed this period at 30 days; Rhode Island, New Jersey, Louisiana, and Wisconsin, at 2 weeks; and Massachusetts, at 4 days.[1]

Unfortunately it was impossible to obtain satisfactory data showing how thoroughly these laws were enforced. Many establishments kept no records of accidents, and in many others the records were incomplete or unreliable. It was not possible, therefore, to learn either how numerous accidents were, nor how fully they were reported.

VENTILATION, SANITATION, AND COMFORT OF EMPLOYEES.

The chapters on provisions for the comfort of employees and on ventilation and sanitation give conditions as found in the 563 establishments visited, but these differ so much that it is hardly possible to make any general statements, either for industries or States. Two facts about the laws relating to these subjects stand out clearly. The provisions are usually expressed in general terms, leaving a great deal to the discretion of the factory inspector or other enforc-

[1] By 1915 the requirements in regard to accident reporting were greatly changed by workmen's compensation laws which had been enacted in 31 States.

ing official; and although several of the points involved, especially in regard to ventilation and sanitation, really require expert knowledge for their proper determination, it is the exception for inspectors to have such knowledge. At the time of this investigation Massachusetts and New York alone of the States covered provided for medical inspectors of factories; since then Illinois and Pennsylvania have provided medical inspectors for their factories, but the remaining States have no such provisions.

In addition to the points covered by the investigation, the report contains two appendixes, giving the laws concerning the employment of women and children and the regulation of factories and workshops for each State in the Union as they were at the beginning of 1912.

CHANGES IN LEGISLATION AFFECTING THE EMPLOYMENT OF WOMEN AND CHILDREN, 1908 TO 1915.

The several volumes of the report which have here been summarized furnished impressive evidence concerning the need at the time of the investigation for legislation for the better regulation of the employment of women and children in industry. Since that time many and important changes have been made in labor laws, especially in those affecting the conditions of employment of women and children and the health and safety of wage earners, regardless of sex and age.

It is not possible to say how far the findings of these reports have been directly instrumental in securing new labor legislation, for within the period since 1908 many agencies have been active in the work of investigation, discussion, and propaganda, in many cases using the data of these reports, in other cases supplementing them by further investigation along the same or other lines.

Most important of such supplementary investigations of an official character have been those of the various State minimum wage commissions, the workmen's compensation or accident commissions, some of the State bureaus or departments of labor, and the New York State Factory Investigating Commission. Most important of the unofficial agencies in the work of investigation and propaganda have been the National Child Labor Committee, the National Consumers' League, and the American Association for Labor Legislation. All of the agencies mentioned have contributed in an important way to the progress in labor legislation affecting women and children which has been so marked during the last 7 or 8 years.

Some definite idea of the breadth and strength of the movement for protective labor legislation during recent years may be gained by an examination of the legislation of the various States from 1908 to 1915. Thus, taking as examples some of the more important provisions for

the protection of woman and child wage earners, we find within this period the number of States prohibiting factory employment under 14 years of age increasing from 30 on January 1, 1908, to 41 in 1915, the number requiring medical examination or a certificate of physical fitness preliminary to the issue of work permits from 8 to 35, the number prohibiting night work under 16 years from 18 to 36, and the number limiting hours of work under 16 years to 8 per day from 3 to 21. Changes quite as striking are found in provisions affecting women, the number of States prohibiting night work for women increasing from 3 to 6, the number limiting the hours of work in factories to 8 per day increasing from none to 4, the number limiting hours of work to 10 a day increasing from 15 to 34, while two classes of laws not known in any State in January, 1908, namely, minimum wage and mothers' pension laws, have been enacted, the former in 11 States, the latter in 29 States.

The progress in labor legislation affecting women and children within this period is not adequately measured by the number of States enacting new laws, for much more effective enforcement has also been provided for by the creation of factory inspection in 13 States where formerly there were no inspectors, by increases in the personnel in other States, and by giving to factory inspectors in several of the States greatly increased powers.

The movement for workmen's compensation legislation and occupational disease reporting, which is entirely new within this period, is scarcely less important than that which has secured the classes of laws already named, for the compensation laws have brought new standards of safety and sanitation affecting all employees, with new methods and powers of enforcement. Furthermore, the guaranty of compensation payments in case of fatal and serious accidents helps to maintain reasonable standards of living without forcing the dependent women and children of the injured workman's family into industrial employment.

The following table shows for important subjects of labor legislation affecting the employment of women and children the number of States having laws of certain classes in January, 1908, the number having such laws in 1915, and the number enacting such laws during each year of the intervening period:

PROGRESS OF LEGISLATION AFFECTING THE EMPLOYMENT OF WOMEN (WITHOUT REGARD TO AGE) AND CHILDREN, 1908 TO 1915.

Subject of labor legislation.	States having laws Jan. 1, 1908.	States first enacting laws in specified years.								States having laws, 1915.
		1908	1909	1910	1911	1912	1913	1914	1915	
Employment in factories prohibited under 14	[1] 20	1	1	.....	3	2	2	2	.....	41
Medical examination of children required for work permits	.....	.....	.....	1	1	4	4	1	2	13
Certificate of physical fitness of children required for work permits	[2] 8	1	2	1	4	1	3	.....	1	22
Night work prohibited under 16	[2] 18	2	4	.....	4	1	3	1	3	36
Night work prohibited for women	3	.....	.....	.....	1	.....	2	(3)	.....	6
8-hour day under 16	[2] 3	.....	4	.....	3	3	4	2	2	21
8-hour day for women in factories	.....	.....	.....	.....	2	.....	[4] 2	(3)	.....	4
10-hour day for women in factories	15	.....	3	.....	4	3	5	.....	4	34
Minimum wage	.....	.....	.....	.....	.....	1	3	.....	2	11
Mothers' pensions	.....	1	.....	.....	3	1	16	.....	6	28
Factory inspection	20	1	3	.....	4	1	2	1	1	43
Workmen's compensation	.....	(5)	.....	1	10	4	7	1	8	31
Occupational disease reporting	.....	.....	.....	.....	6	2	7	.....	1	16

[1] Also the District of Columbia; employment forbidden only during school time in 3 States.
[2] Also District of Columbia.
[3] Applies only to mercantile establishments and bakeries in 1 State.
[4] District of Columbia.
[5] Law of Arizona applies to bakeries, laundries, mercantile establishments, hotels, restaurants, and telephone and telegraph offices; factories are not mentioned.
[6] United States law of May 30, 1908, covering Federal employees, was first compensation act.

The two tables which follow present in concise form analyses of the principal features of the laws of the various States affecting women and children in industry, as existing November 1, 1915.

AGE OF LEGAL EMPLOYMENT AND MAXIMUM LEGAL HOURS OF LABOR OF CHILDREN EMPLOYED IN INDUSTRY IN THE UNITED STATES, NOV. 1, 1915.

States.	Age below which—			Maximum legal hours of labor.		Night work prohibited between—
	Employment is prohibited.	Hours of labor are restricted.	Night work is prohibited.	Per day.	Per week.	
						p. m. a. m.
Alabama	[1] 13	16	16	11	60	6 and 6
Arizona	14	[2] 16	[2] 16	8	48	7 and 7
Arkansas	14	16	16	8	48	7 and 6
California	15	18	18	8	48	10 and 5
Colorado	14	16	16	8	48	([3])
Connecticut	14	16	16	10	55	([4])
Delaware	14	16	16	.....	[5] 54	6 and 7
District of Columbia	14	16	16	8	48	7 and 6
Florida	14	16	16	9	54	8 and 5
Georgia	14	([6])	14½	10	60	7 and 6
Hawaii	.....	.....	[7] 16	.....	.....	9 and 6
Idaho	14	16	16	9	54	9 and 6
Illinois	14	16	16	8	48	7 and 7
Indiana	14	16	16	[8] 8	[8] 48	6 and 7
Iowa	14	16	16	8	.....	6 and 7
Kansas	14	16	16	8	48	6 and 7
Kentucky	14	16	16	8	48	6 and 7
Louisiana	14	18	[2] 16	10	60	7 and 6
Maine	14	[2] 16	.....	10	58	.....
Maryland	14	16	.....	10	.....	.....
Massachusetts	14	16	16	8	48	6 and 6:30
Michigan	15	18	[2] 16	10	54	6 and 6
Minnesota	14	16	16	8	48	7 and 7
Mississippi	[9] 12	[10] 16	[10] 16	8	48	7 and 6
Missouri	14	16	16	8	48	7 and 7
Montana	16	.....	.....	.....	.....	.....
Nebraska	14	16	16	8	48	8 and 6
Nevada	14	[2] 16	.....	8	48	.....
New Hampshire	14	18	[2] 16	10½	55	7 and 6:30
New Jersey	14	16	16	8	48	7 and 7
New Mexico	[11] 14	.....	.....	.....	.....	.....
New York	14	16	16	8	.....	5 and 8
North Carolina	12	21	14	.....	60	8 and 5
North Dakota	14	16	16	8	48	7 and 7
Ohio	[12] 15	[2] 16	[2] 16	8	48	6 and 7
Oklahoma	14	16	[2] 16	8	48	6 and 7
Oregon	14	16	16	10	([5])	6 and 7
Pennsylvania	14	16	16	9	51	8 and 6
Porto Rico	10	16	16	7	42	6 and 6
Rhode Island	14	16	16	10	54	8 and 6
South Carolina	12	([6])	16	11	60	8 and 6
South Dakota	14	16	.....	10	60	.....
Tennessee	14	16	16	10½	57	6 and 6
Texas	15	.....	.....	.....	.....	.....
Utah	14	[13] 14	.....	.....	54	.....
Vermont	14	16	16	9	50	8 and 7
Virginia	14	16	16	10	([5])	9 and 7
Washington	14	([13])	[14] 16	[7] 8	.....	[14] 8 and 5
West Virginia	14	.....	.....	.....	.....	.....
Wisconsin	[7] 14	16	16	8	48	6 and 7
Wyoming	.....	14	.....	9	56	.....

[1] After Sept. 1, 1916, 14 years.
[2] 18 for females.
[3] After 8 p. m.
[4] After 6 p. m.
[5] 6 days.
[6] Law is general for cotton and woolen mills; no age limit.
[7] Females only.
[8] 9 hours per day and 54 per week if written consent of parent is obtained.
[9] 14 for females.
[10] 18 for females; 14 and 16 years for males and females, respectively, in cotton and knitting mills.
[11] In mines only.
[12] 16 for females.
[13] No age limit.
[14] In bakeries.

State.	Hours of labor— In—	Per day.	Per week.	Time for meals.	Night-work prohibited from—	Employment prohibited in—	Seats to be furnished in—	Separate toilets.	Minimum wages.	Mothers' pensions.	Employment prohibited at childbirth.
				Min.							*Weeks.*
Ala.						Mines	Stores and shops	Yes			
Alaska						Barrooms					
Ariz.	Laundries, bakeries, mercantile establishments, hotels, and restaurants.[1]	8	[2] 56	60	[3] p. m. to [3] a. m.[3]	Mines, quarries, coal breakers, barrooms, and any occupation requiring constant standing.[4]	Mills, factories, mercantile establishments, bakeries, and offices.			Yes	
Ark.	Manufacturing, mechanical, and mercantile establishments, laundries, express and transportation companies.	9	54	45	9 p. m. to 7 a. m.[5]	Mines	Factories, stores, etc.		Yes		
Cal.	Manufacturing, mechanical, and mercantile establishments, laundries, offices, etc.[6]	8	48	60	10 p. m. to 5 a. m.[6]		Manufacturing, mechanical, and mercantile establishments.		Yes	Yes	
Colo.	Manufacturing, mechanical, and mercantile establishments, laundries, hotels, and restaurants.	8				Coal mines and coke ovens	do	Yes	Yes	Yes	
Conn.	Manufacturing and mechanical establishments.	10	55			Barrooms	do				8
	Mercantile establishments.	10	58		10 p. m.						
Del.	Mercantile, mechanical, and manufacturing establishments, laundries, bakeries, and offices.[7]	[8] 10	55	45		Barrooms	Manufacturing, mechanical, and mercantile establishments.	Yes			
D. C.	Manufacturing, mechanical, and mercantile establishments, laundries, hotels, restaurants, and offices.	8	48	45	6 p. m. to 7 a. m.[9]	do	Stores, shops, offices, and factories.	Yes			
Fla.						Barrooms, and in cleaning moving machinery.[9]	Mercantile establishments	Yes			

[1] Also telegraph and telephone offices in which more than 3 women are employed.
[2] 54 for females under 18.
[3] For females under 18.
[4] Also certain hazardous manufacturing, etc., employments for females under 18.
[5] Canneries excepted.
[6] 8 if any work is done between 11 p. m. and 7 a. m.

LEGISLATION REGULATING THE EMPLOYMENT OF WOMEN 16 YEARS OF AGE AND OVER, NOV. 1, 1915—Continued.

State.	Hours of labor— In—	Per day.	Per week.	Time for meals.	Night-work prohibited from—	Employment prohibited in—	Seats to be furnished in—	Separate toilets.	Minimum wages.	Mothers' pensions.	Employment prohibited at childbirth.
				Min.							*Weeks.*
Ga.	Cotton and woolen mills	10	60				Manufacturing, mechanical, and mercantile establishments.				
Hawaii						Barrooms [1]					
Idaho	Mechanical and mercantile establishments, laundries, hotels, and restaurants.[2]	9				Barrooms, breweries, etc.[1]				Yes	
Ill.	Mechanical and mercantile establishments, factories, laundries, hotels, restaurants, offices, etc.	10				Mines	Factories, mercantile establishments, mills, and workshops.	Yes		Yes	
Ind.				[3] 60	10 p. m. to 6 a. m.[3]	Mines, cleaning moving machinery, mendicancy, and as street musicians.[4]	Any business	Yes			
Iowa						Cleaning moving machinery.[4]	Mercantile and manufacturing business.	Yes		Yes	
Kans.							Stores, shops, hotels, restaurants, etc.		Yes	Yes	
Ky.	Laundries, bakeries, factories, workshops, stores, mercantile, manufacturing, and mechanical establishments, hotels, restaurants, and offices.	10	60			Occupations requiring constant standing [1] and cleaning moving machinery.[4]	All places of employment	Yes			
La.	Mills, factories, packing houses, mercantile and manufacturing establishments, workshops, laundries, etc.	10	60	[5] 60	7 p. m. to 6 a. m.[4]	Barrooms and cleaning moving machinery.	.....do	Yes			
Me.	Manufacturing and mechanical establishments.[2]	10	58				Stores, shops, hotels, restaurants, etc.				
Md.	Manufacturing, mechanical, mercantile, and printing establishments, bakeries, and laundries.[2]	[6] 10	60	30		Mines, serving drinks in theaters, etc., oiling or cleaning moving machinery, employments requiring constant standing, certain hazardous manufacturing.[4]	Stores, mercantile, and manufacturing establishments in Baltimore.				

Mass.....	Factories, workshops, manufacturing, mercantile and mechanical establishments, stores, and garment repairing workshops.	10	54	.....	10 p. m. to 6 a. m.[7]	Barrooms[1] and certain hazardous manufacturing.[6]	Manufacturing, mercantile, and mechanical establishments.	Yes...	Yes...	Yes...	6
Mich.....	Factories, mills, warehouses, workshops, laundries, stores, shops, etc.[2]	10	54	.....	6 p. m. to 6 a. m.[8]	Barrooms; cleaning moving machinery, in manufacture of liquor, or any hazardous employment.[3]	Stores, shops, offices, and factories.	Yes...	.....	Yes...	.....
Minn.....	Mechanical and manufacturing establishments.[9]	9	54	60	.....	Oiling or cleaning moving machinery; mendicancy or as street musicians;[3] messenger service.[1]	Mercantile, manufacturing, and hotel or restaurant business.	Yes...	Yes...	Yes...	.....
	Mercantile establishments, restaurants, lunch rooms, etc.	10	54	.....	.....	.....	.....	.....	.....	.....	.....
Miss.....	Manufacturing and repairing, laundry, millinery, dressmaking, and mercantile establishments, offices, and other occupations.	[9] 10	[9] 60	.....	7 p. m. to 6 a. m.[6]	.....	.....	.....	.....	.....	.....
Mo.....	Manufacturing, mechanical, and mercantile establishments, factories, laundries, bakeries, restaurants, clerical work, etc.[2]	9	54	.....	.....	Mines, barrooms, and cleaning moving machinery.	Manufacturing, mechanical, mercantile, and other establishments.	Yes...	.....	Yes...	.....
Mont.....	Manufacturing, mechanical, and mercantile establishments, offices, laundries, hotels, and restaurants.	9	.....	.....	.....	.....	Manufacturing, mechanical, and mercantile establishments, laundries, hotels, restaurants, and other establishments.	.....	.....	Yes...	.....
Nebr.....	Manufacturing, mechanical, and mercantile establishments, laundries, hotels, restaurant, offices, etc.[2]	9	54	.....	10 p. m. to 6 a. m.	.....	Manufacturing, mechanical, and mercantile establishments, laundries, hotels, restaurants, offices, etc.	Yes...	Yes...	Yes...	.....
Nev.....	.....	[4] 8	[4] 48	.....	.....	Barrooms;[1] mendicancy, or as street musicians.[4]	.....	.....	.....	Yes...	.....
N. H.....	Manufacturing, mechanical, and mercantile establishments, laundries, restaurants, etc.	[10] 10½	[10] 65	60	7 p. m. to 6 30 a. m.[4]	Barrooms.....	Manufacturing, mechanical, and mercantile establishments.	.....	.....	Yes...	.....
N. J.....	Manufacturing and mercantile establishments, bakeries, laundries, and restaurants.[2]	10	60	30	.....	Mendicancy or as street musicians.[6]	Manufacturing, mechanical, and mercantile establishments.	Yes...	.....	Yes...	.....
N. Mex....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

[1] For females under 21.
[2] Six days excepted.
[3] Boys under 16.
[4] For females under 18.
[5] May be reduced to not less than 30 if two-thirds of the employees desire.
[6] 8 if any work is done between 10 p. m. and 6 a. m.
[7] From 6 p. m. to 6 a. m. in textile factories; no limitation in mercantile establishments.
[8] 8 per day and 48 per week for females under 18.
[9] In cities of over 5,000 population.
[10] 8 per day and 48 per week if any work is done between 8 p. m. and 6 a. m.

LEGISLATION REGULATING THE EMPLOYMENT OF WOMEN 16 YEARS OF AGE AND OVER, NOV. 1 1915.—Concluded.

State.	Hours of labor—			Time for meals.	Night-work prohibited from—	Employment prohibited in—	Seats to be furnished in—	Separate toilets.	Minimum wages.	Mothers' pensions.	Employment prohibited at childbirth.
	In—	Per day.	Per week.								
				Min.							*Weeks.*
N. Y.	Factories	9	54	60	10 p. m. to 6 a. m.	Mines; barrooms; at emery wheels, etc.; polishing or buffing in rooms where cores are baked.	Factories, hotels, restaurants, and mercantile establishments.	Yes		Yes	[4]
	Mercantile establishments	9	54	45	10 p. m. to 7 a. m.						
	Canning and preserving perishable products.	[1] 10	[1] 60	60	10 p. m. to 6 a. m.						
N. C.	Manufacturing establishments.		60				Stores, shops, offices, and manufacturing establishments.	Yes			
N. Dak.										Yes	
Ohio	Factories, workshops, offices, millinery, dressmaking, and mercantile establishments in any city.[2]	[3] 10	[4] 54	30	6 p. m. to 7 a. m.[2]	Operating emery wheels, etc.; barrooms, mines, quarries, coal breakers, and oiling or cleaning moving machinery.[5]	Factories, workshops, offices, restaurants, bakeries, mercantile establishments, etc.	Yes		Yes	
Okla.	Manufacturing and mercantile establishments, laundries, offices, hotels, restaurants, places of amusement, in towns of 5,000 or over.	9			do	Mines	Mercantile establishments, stores, shops, restaurants, hotels, etc.	Yes		Yes	
Oreg.	Manufacturing, mechanical, and mercantile establishments, laundries, hotels, restaurants, and offices.	10	60				Manufacturing, mechanical establishments, laundries, hotels, restaurants, and other establishments.		Yes	Yes	
Pa.	Any establishment[3]	10	54	45	10 p. m. to 6 a. m.[6]	Mines; mendicancy, or as street musicians; certain hazardous manufacturing.[7]	Any establishment	Yes		Yes	
P. I.											
P. R.	All employment, except certain clerical work, nursing, and domestic work.	[3] 8	48	[4]	10 p. m. to 6 a. m.		All establishments				
R. I.	Factories, manufacturing, mechanical, business, and mercantile establishments.	10	54			Barrooms	Manufacturing, mechanical, and mercantile establishments.	Yes			

S. C	Cotton and woolen mills	10	60				Mercantile establishments	Yes			
	Mercantile establishments	12	60		10 p. m.						
S. Dak						Barrooms [9]	Mercantile, manufacturing, hotel, and restaurant business.	Yes		Yes	
Tenn	Workshops and factories	10½	58				Factories, mercantile establishments, mills, and workshops.	Yes			
Tex	Manufacturing and mercantile establishments, hotels, restaurants, and offices.	[10] 9	[11] 54			Barrooms	Manufacturing, mechanical, and mercantile establishments, laundries, restaurants, hotels, etc.				
Utah	Manufacturing, mechanical, and mercantile establishments, laundries, hotels, restaurants, offices, etc. [1]	9	54			Mines and barrooms	Stores, shops, hotels, restaurants, and other places.		Yes	Yes	
Vt	Manufacturing and mechanical establishments.	11	66			Barrooms; occupations requiring constant standing. [7]	Mercantile establishments, hotels, restaurants, etc.				6
Va	Factories, workshops, mercantile establishments, laundries. [3]	10				Coal mines and barrooms	Mercantile establishments	Yes			
Wash	Mechanical and mercantile establishments, laundries, hotels, and restaurants. [3]	8				Mines and barrooms; messenger service; [13] mendicancy or as street musicians. [7]	All establishments		Yes	Yes	
W. Va						Coal mines, cleaning moving machinery; mendicancy, or as street musicians. [7]	Manufacturing, mechanical, mercantile, and other establishments.	Yes		Yes	
Wis	All employment	[12] 10	[12] 55	60		Mines and quarries, any dangerous employment; using emery, etc., wheels in certain establishments, acting as messengers. [7]	Manufacturing, mechanical, and mercantile establishments.	Yes	Yes	Yes	
Wyo	Manufacturing, mechanical, and mercantile establishments, printing offices, bakeries, laundries, canneries, telephone offices (if more than 3 employees), theaters, hotels, and restaurants except railroad.	10	56	30		Coal, iron, and other dangerous mines.	Manufacturing, mechanical, and mercantile establishments.			Yes	

[1] From June 15 to Oct. 15; 12 hours per day and 66 per week, from June 25 to Aug. 5 under special rules issuable by industrial board.
[2] Canneries excepted.
[3] 8 for females under 18.
[4] 48 for females under 18.
[5] For females under 21; also certain hazardous manufacturing, etc., employments for females under 18.
[6] 9 and 6 for females under 21, except telephone operators over 18.
[7] For females under 18.
[8] 9 on condition of double pay for overtime.
[9] For females under 21.
[10] 10 in cotton and woolen mills and 11 in laundries, but double pay for work in excess of 9 hours.
[11] 60 in cotton and woolen mills.
[12] For females under 19 in cities of the first class.
[13] 8 per day and 48 per week if any work is done between 8 p. m. and 6 a. m.

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